APPENDIX I

WATER & WASTEWATER FEASIBILITY STUDY

WATER & WASTEWATER FEASIBILITY STUDY

Wilton Rancheria

ALTERNATE SITES
Twin Cities, Historic Rancheria and Mall

Prepared for:

Analytical Environmental Services (AES)
1801 7th Street, Suite 100
Sacramento, CA 95811

SUMMIT
CIVIL STRUCTURAL ELECTRICAL WATER|WASTEWATER

Project No. 2014014
Date: June 10, 2015

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

SECTION 1 – INTRODUCTION

Summit Engineering, Inc. was requested to provide a water and wastewater feasibility study for the proposed Wilton Rancheria development project. This report details the analysis of water and wastewater feasibility for proposed commercial developments at three different locations in Sacramento County, California: near the City of Galt (Twin Cities Site), Wilton (Historic Rancheria Site), and the City of Elk Grove (Mall Site). The proposed development alternatives include a casino, a casino and hotel, and a retail shopping center. This study incorporates regulatory and preliminary design requirements for providing each alternative with a water supply and wastewater management system. The potential to connect to existing City and County water and sewer districts were assessed. Site feasibility and needs for onsite water supply and treatment, and onsite wastewater treatment and disposal were also evaluated.

PROJECT LOCATIONS

Three locations and six total alternatives were considered in Sacramento County. See Table 1-1 for a summary of site uses for each alternative. A detailed description of each site and alternative is provided below.

SITE 1: TWIN CITIES SITE (GALT)

The proposed Twin Cities Site (Alternatives A, B, and C) is located within the City of Galt's Sphere of Influence as defined by the Sacramento Local Agency Formation Commission Resolution No. 2011-04-0119-06-09. It is approximately 282 acres and lies along the west side of Highway 99, directly east of the City of Galt's wastewater treatment plant, and north of Twin Cities Road (See Appendix A, Site Plans). The site topography is primarily flat and generally slopes towards Laguna Creek to the north. This study details the feasibility of connecting to public utilities for water supply and wastewater treatment and disposal and alternatively having self-supported onsite systems for this site. Table 1-1 describes the proposed development summary for this site, and Table 1-2 and Table 1-3 show current infrastructure and feasible options for this site.

Currently, the land is used primarily for agriculture; irrigation system features are apparent throughout the site. Irrigation components include three wells, a set of four pressure tanks, and irrigation valving. Applied Engineering and Geology, Inc. (AEG) identified two irrigation wells on the site at the north end of West Stockton Boulevard and one irrigation well on the northern edge of Twin Cities Road. The irrigation wells are understood to produce between 400 and 1,100 gpm. One domestic well capable of producing 50 gpm was identified near the residence adjacent to West Stockton Boulevard on the southern half of the parcel. There are currently no potable water systems or wastewater infrastructure capable of accommodating the project demands for this site (see Section 2 –Wastewater Generation and Water Demand).

SITE 2: HISTORIC RANCHERIA SITE (WILTON)

The proposed Historic Rancheria Site (Alternatives D and E) is located north of Green Road, south of the Cosumnes River, and directly east of the Historic Wilton Rancheria (See Appendix A, Site Plans). The site is approximately 3 miles southeast of the City of Elk Grove. The property is approximately 75 acres, with the western half of the site being within the Historic Wilton Rancheria. The site has gentle rolling topography with a cross slope of approximately one percent. This study details the feasibility of water supply and wastewater treatment and disposal for self-supported onsite systems as public connection to utilities for this site are

considered unfeasible. Table 1-1 describes the proposed alternatives for this site, and Tables 1-2 and 1-3 show the feasible options for this site.

Existing water sources within the site include an irrigation well located on the northern edge of the property and a domestic and irrigation well at the south edge of the property. As with the Twin Cities Site, there are currently no potable water systems or wastewater infrastructure capable of accommodating the project demands available at this site.

SITE 3: MALL SITE (ELK GROVE)

The proposed Mall Site (Alternative F) is surrounded by Highway 99 to the east, Promenade Parkway to the west, and Grant Line Road to the south (see Appendix A, Site Plans). The site is approximately 28 acres with flat topography and contains unfinished structures originally developed for a new mall. This study details the feasibility of water supply and wastewater treatment and disposal for connecting to public utilities. Due to existing municipal connections, the development of onsite water and wastewater systems was not considered. Table 1-1 describes the proposed alternatives for this site, and Table 1-2 and Table 1-3 show current infrastructure and feasible options for this site.

Potable water supply and wastewater sewer connection have been installed at the facility with water utilities managed by Sacramento County Water Agency and wastewater collection managed by Sacramento Area Sewer District. The Sacramento Regional County Sanitation District manages the wastewater treatment plant where this facility will send its wastewater. Existing water distribution and sewer connections are located along Promenade Parkway (See Appendix A for the site's utility plan). Additional information on the existing infrastructure is further described in later sections of this study.

PROJECT ALTERNATIVES

The alternatives are described in this section and Table 1-1 summarizes the areas designated for each use. Table 1-1 describes the proposed alternatives, and Table 1-2 and Table 1-3 describe the current infrastructure and feasibility for each alternative for water and wastewater. Additional detail on anticipated building usage is provided in Appendix B, Preliminary Building Programs for Alternatives A through F.

ALTERNATIVES A, D, & F - CASINO/HOTEL DEVELOPMENT

Alternatives A, D, and F will have identical components with a casino building, a convention area, and a hotel (see Appendix A, Site Plans, for site layouts for each option). The main portion of the casino and hotel buildings will offer gaming, food and beverage, and overnight stay facilities. There will also be employee administrative offices and facilities. Smaller portions of the buildings will be used for spa, fitness, retail, and swimming pool facilities. The type of building usage corresponds with anticipated water demand, wastewater generation rates, and wastewater strength. Food and beverage facilities tend to have higher strength organic waste than administrative offices. Water demand and wastewater generation are further described in Section 2. While these alternatives have the same water demands and wastewater generation rates, each site will have a different approach to address water needs and wastewater disposal based on site characteristics.

ALTERNATIVES B & E - REDUCED INTENSITY CASINO

Alternatives B and E will have identical layouts with just a Casino building (see Appendix A, Site Plans, for site layouts). Similar to Alternatives A, D, and F facility uses, the casino building for Alternatives B and E will

primarily include gaming, food and beverage, and employee facilities, with a smaller footprint dedicated to spa, fitness, retail, and swimming pool facilities. Unlike Alternatives A, D, and F, no hotel or overnight stay facilities will be available for Alternatives B and E. The overall footprint of Alternative B and E will be smaller than Alternatives A, D, and F. Water demand and wastewater generation are further described in Section 2. Alternatives B and E have the same water demands and wastewater generation rates, but each site will have a different approach to address water needs and wastewater disposal based on site characteristics.

ALTERNATIVE C - RETAIL DEVELOPMENT

Alternative C will include a retail development with retail and food and beverage facilities; it is the only alternative with this proposed use. There will be approximately 23,000 square feet of restaurants, a 200,000 square foot grocery store, 185,000 square feet of retail stores, a 145,000 square foot home improvement store, a 125,000 square foot membership warehouse, and an 8,000 square foot gas station (see Appendix A, Site Plans, for site layouts). Water demand and wastewater generation are further described in Section 2.

TABLE 1-1 SUMMARY OF SITE USES FOR ALTERNATIVES A THROUGH F

	Twin Cities Site (Galt)			**Historic Rancheria Site (Wilton)**		**Mall Site (Elk Grove)**
Alternatives	**A**	**B**	**C**	**D**	**E**	**F**
Site Area (Acres)	282			75		28
Main Floor, High Limits, & Poker (ft^2)	110,260	110,260	N/A	110,260	110,260	110,260
Restaurants (ft^2)	44,500	42,300	23,000	44,500	42,300	46,375
Hotel (Rooms)	302	N/A	N/A	302	N/A	307
Convention Center (ft^2)	48,150	N/A	N/A	48,150	N/A	59,000
Retail (ft^2)	N/A	N/A	185,000	N/A	N/A	N/A
Grocery Store (ft^2)	N/A	N/A	200,000	N/A	N/A	N/A
Membership Warehouse (ft^2)	N/A	N/A	125,000	N/A	N/A	N/A
Home Improvement (ft^2)	N/A	N/A	145,000	N/A	N/A	N/A
Gas Station (ft^2)	N/A	N/A	8,000	N/A	N/A	N/A
Parking Spaces	3,500	3,500	3,320	3,500	3,500	1,790

TABLE 1-2 WASTEWATER FEASIBILITY SUMMARY TABLE

Sites	**Twin Cities Site**			**Historic Rancheria**		**Mall Site**
Alternatives	**A**	**B**	**C**	**D**	**E**	**F**
Existing public sewer line onsite	No	No	No	No	No	Yes
Connection point available in the vicinity of the proposed site	Yes[1]	Yes[1]	Yes[1]	No	No	Yes
Sufficient sewer capacity	No [5]	No [5]	No [5]	N/A	N/A	Yes[4]
Existing public WWTP infrastructure	Yes	Yes	Yes	No	No	Yes
Sufficient WWTP capacity	Yes[2]	Yes[2]	Yes[2]	No	No	Yes
Feasibility of wastewater treatment and disposal via public infrastructure	Yes	Yes	Yes	No	No	Yes
Onsite wastewater treatment feasible	Yes	Yes	Yes	Yes	Yes	No
Land disposal feasible	Yes	Yes	Yes	No[3]	No[3]	No
Surface water discharge (NPDES) feasible[6]	N/A	N/A	N/A	Yes	Yes	No
Feasibility of onsite wastewater treatment and disposal	Yes	Yes	Yes	Yes	Yes	No

Notes:

1. The City's WWTP is currently the nearest connection point for the proposed site.

2. The WWTP currently has sufficient capacity, but may want to upgrade prior to connection.

3. Not enough land for land disposal only. Would have to be supplemented with surface water discharge.

4. SASD's trunk sewer on Promenade Parkway likely has sufficient capacity, but the smaller 8 inch sewer connection located on the property does not.

5. Insufficient capacity since there is no existing sewer infrastructure near the site.

6. NPDES permits were not evaluated for the Galt site due to the large amount of land available for land disposal and the proximity of the site to a nearby municipal wastewater treatment plant.

TABLE 1-3 WATER FEASIBILITY SUMMARY TABLE

Sites	**Twin Cities Site**			**Historic Rancheria**		**Mall Site**
Alternatives	**A**	**B**	**C**	**D**	**E**	**F**
Existing municipal water supply line onsite	No[1]	No[1]	No[1]	No	No	Yes
Sufficient municipal water system capacity available	No	No	No	No	No	Yes[2]
Municipal water supply connection feasible	Yes[3]	Yes[3]	Yes[3]	No	No	Yes
Onsite water treatment and supply feasible	Yes	Yes	Yes	Yes	Yes	N/A[4]

Notes:

1. The City of Galt has existing water supply infrastructure, but not in the vicinity of the Twin Cities Site.
2. SCWA's distribution water mains have sufficient capacity, but facility connections may need to be upgraded.
3. Connection is feasible with Municipal water system upgrades.
4. The site may be feasible for onsite water treatment and supply, but an onsite system was not considered since there is existing municipal infrastructure at the facility.

SECTION 2 – WASTEWATER GENERATION AND WATER DEMAND

This section details preliminary estimates of wastewater generation as well as potable and recycled water demands for each alternative. Wastewater generation rates and water demands were identified based on anticipated facility operations as detailed in Table 1-1 and in Appendix B, Preliminary Building Programs for Alternatives A through F.

WASTEWATER GENERATION AND STRENGTH

Wastewater production rates for the proposed developments were determined based on preliminary building usage information, as detailed in Appendix B, Preliminary Building Programs for Alternatives A through F. To determine wastewater generation for each application, the number of slots, gaming tables, seats at each restaurant, and hotel rooms as well as square footage for each alternative were assigned wastewater generation rates. These rates were identified based on feedback from experienced facility operators who have serviced many facilities of this kind. Wastewater production at facilities of this size varies greatly by site. The wastewater generation will depend on fixtures used and the water management practices. The wastewater production numbers in this report are conservative estimations and actual flow data should determine wastewater connection and monthly fees.

Generally, the highest flow contributions will be from the casino, hotel, and restaurants. Alternative C had the lowest generation rates because neither a hotel nor casino is included in the preliminary development plan. Hotel and food and beverage operations have the highest rate of wastewater generation per square area, while casino operations are anticipated to have the highest volume of guests. Casino operations are anticipated to contribute between 28 and 39 percent of the total wastewater flows during peak operation for Alternatives A, B, D, E, and F. Retail, spa, fitness, and convention center operations are anticipated to have the lowest wastewater generation rates and flow contributions. Assumed wastewater generation rates are provided in detail in Appendix B, Wastewater Production and Strength Calculations. Table 2-1 shows the projected wastewater generation and strength for each alternative. Average daily wastewater flow was assumed to be 75% of peak daily flow. The facility's wastewater strength is anticipated to be higher than typical for domestic wastewater because food and beverage preparation facilities will likely contribute flows that are higher in solids and organic constituents.

TABLE 2-1 SUMMARY OF WASTEWATER PRODUCTION

	Twin Cities Site			Historic Rancheria Site		Mall Site
Alternative	**A**	**B**	**C**	**D**	**E**	**F**
Peak Disposal Flow (gpd)	308,000	205,000	138,000	305,000	201,000	309,000
Average Flow (gpd)	231,000	154,000	104,000	229,000	151,000	232,000
BOD (mg/L)	330	390	430	330	390	330
TSS (mg/L)	210	210	210	210	210	210

WATER DEMAND

Water demand may originate from three types of water usage for each alternative: potable water use within buildings, landscape irrigation, and fire protection water. The anticipated demands for each category are described below. Landscape and fire protection water demands may be satisfied with recycled water sources where available. Recycled water demand and potential supply availability are discussed in the Recycled Water subsection on page 14.

WATER USAGE IN BUILDINGS

Water usage in buildings may include the activities listed below for casino, hotel, and retail facilities.

- Surface Cleaning
- Consumption
- Food and drink preparation
- Dishwashers
- Sinks
- Toilets
- Showers
- Swimming Pools
- Hot Tubs
- Laundry
- Heating Equipment
- Cooling Equipment
- Air Conditioning Equipment

Hotel and food and beverage facilities will have the highest rate of water usage per unit area. The water usage within buildings was estimated for each alternative based on wastewater generation rates. Ten percent of water losses were assumed to occur between water use and wastewater flows based on feedback from an experienced operator for similar facilities of this size. Losses occur through consumption and heating, ventilation, and cooling (HVAC) systems. Table 2-2 details the projected average and peak day water demand for each alternative. As with wastewater generation, alternatives with a larger footprint and hotel are projected to have higher water demand than alternatives without these uses. Alternatives with larger food and beverage footprints are also projected to have higher water demands than alternatives with smaller footprints for these operations. Retail and convention center water demands per square area are anticipated to be low.

TABLE 2-2 POTABLE WATER USAGE WITHIN BUILDINGS

	Daily Building Flow (gpd)					
	Twin Cities Site			Historic Rancheria Site		Mall Site
Alternative	**A**	**B**	**C**	**D**	**E**	**F**
Peak	338,000	225,000	152,000	335,000	221,000	340,000
Average	254,000	169,000	114,000	252,000	166,000	255,000

LANDSCAPE IRRIGATION DEMAND (POTABLE)

Irrigation water will be needed to maintain plant life in driveway and road medians and other landscaped areas throughout the project site. Irrigation demands in these areas were conservatively determined assuming a high water demand grass crop with a crop coefficient of 0.8. Irrigation in bioswales and stormwater and flood detention ponds was also assumed to be needed to maintain vegetation for stormwater treatment. The estimated landscaped area and required irrigation flows are shown in Table 2-3. The annual demand and average daily flow is shown for July, the month with the highest irrigation demand. Landscape irrigation flow

assumptions and monthly irrigation demand is further detailed in Appendix B. The available recycled water supply that may be used to offset potable irrigation water supply is described on page 14.

TABLE 2-3 LANDSCAPE IRRIGATION DEMAND

	Twin Cities Site			Historic Rancheria Site		Mall Site
Alternative	**A**	**B**	**C**	**D**	**E**	**F**
TOTAL AREA (ft^2)	**703,000**	**985,000**	**760,000**	**1,863,000**	**1,691,000**	**111,000**
Landscaped	442,000	724,000	468,000	848,000	770,000	111,000
Stormwater & Flood Pond	179,000	179,000	179,000	948,000	853,000	0
Bioswales	82,000	82,000	113,000	67,000	68,000	0
AVERAGE DAILY DEMAND DURING PEAK MONTH, JULY (gpd)	**99,000**	**138,000**	**107,000**	**262,000**	**238,000**	**16,000**
Landscaped	62,000	101,000	66,000	119,000	108,000	16,000
Stormwater & Flood Pond	25,000	25,000	25,000	133,000	120,000	0
Bioswales	12,000	12,000	16,000	10,000	10,000	0
ANNUAL DEMAND (Mgal/yr)	**15**	**21**	**16**	**40**	**36**	**2**

MAXIMUM DAILY DEMAND (MDD)

The maximum daily potable water demand (MDD) was determined for each alternative based on the peak daily water usage within buildings and the daily landscape irrigation water demand for the peak month. The maximum daily water demand for each alternative is summarized in Table 2-4. The potential to offset potable water supply with recycled water supply for irrigation is discussed in the subsection, Recycled Water, on page 14.

TABLE 2-4 MAXIMUM DAILY DEMAND

	Max Daily Demand (gpd) for Alternative					
	Twin Cities Site			Historic Rancheria Site		Mall Site
	A	**B**	**C**	**D**	**E**	**F**
Water Usage within Building *Potable*	338,000	225,000	152,000	335,000	221,000	340,000
Landscape Irrigation (July) *Potable/non-potable*	62,000	101,000	66,000	119,000	108,000	16,000
Pond & Bioswale (July) *Potable*	37,000	37,000	41,000	142,000	129,000	0
Total MDD	**437,000**	**363,000**	**259,000**	**596,000**	**458,000**	**356,000**

FIRE PROTECTION REQUIREMENTS

Fire protection storage requirements were approximated to understand water demand and storage requirements for each alternative. Actual fire protection requirements will need to be verified by a fire consultant. The information provided here is for water feasibility planning purposes only.

Where a city water system connection is available, fire protection water will be provided by the city or water agency. The City of Galt water system typically provides fire protection flows up to 3,000 gallons per minute (gpm) for commercial applications, consistent with the 2013 California Fire Code. At the Mall Site, fire flows are provided by the local water agency, Sacramento County Water Agency, at a flow rate of 4,000 gpm.

Where a city water system connection is not feasible (Historic Rancheria Site) or preferred, fire protection storage and flows must be provided. Fire protection demands may be supplied by either potable or non-potable (e.g. recycled) water sources. If recycled water is to be used for fire protection, fire protection storage must be provided separate from potable water storage.

For onsite water systems, fire protection storage and flow rate requirements were estimated based on fire protection standards utilized by the Cosumnes Fire Department, who services the Sacramento County area within the vicinity of the project sites. As with the Cities of Galt and Elk Grove, the Cosumnes Fire Department enforces the 2013 California Fire Code. The fire flow requirements were estimated based on Appendix B of the Fire Code assuming that the building construction is Type IIA or IIIA as defined by the California Building Code and that the buildings will have fire protection sprinklers. For Type IIA and IIIA building construction with a sprinkler fire system, building footprints greater than 166,501 square feet require 3,000 gpm for 4 hours. The footprints of the largest buildings for all alternatives were identified to be larger than 166,501 square feet (see Table 1-1). Approximately 720,000 gallons of fire protection storage is anticipated to provide the minimum required fire flow for all alternatives.

If the fire protection tank is separate from the potable water system storage tank, approximate fire protection tank dimensions are 20 foot height and 84 foot diameter assuming 2 feet of freeboard is available. By separating fire protection and potable water supply storage, recycled water may be used to supplement fire protection water supply. Recycled water availability is as described on page 14, subsection Recycled Water. To prevent stagnation of the fire protection water, the fire supply would be drained periodically and used for irrigation.

If the fire protection and water storage tank are combined, only potable water would be used for fire protection purposes. The combined storage tank volume would include the required fire protection volume, the maximum daily demand, and 2 feet of freeboard. The total water storage tank volume is projected for each alternative as shown in Table 2-5. Approximate tank sizes are summarized in Table 2-6. The Mall Site (Alternative F) was excluded since fire protection water would be supplied through the City water connection.

TABLE 2-5 COMBINED FIRE AND WATER SUPPLY STORAGE REQUIREMENTS

	Fire and Water Supply Storage (gal)				
	Twin Cities Site			Historic Rancheria Site	
	A	B	C	D	E
MDD	437,000	363,000	259,000	596,000	458,000
Fire Protection	720,000	720,000	720,000	720,000	720,000
Total	**1,157,000**	**1,083,000**	**979,000**	**1,316,000**	**1,178,000**

TABLE 2-6 COMBINED FIRE AND WATER STORAGE TANK SIZES

	Twin Cities Site			Historic Rancheria Site	
	A	B	C	D	E
Tank Height (ft)	20	20	20	20	20
Tank Diameter (ft)	110	104	99	120	110

RECYCLED WATER

As fresh water becomes an increasingly limited resource for the State of California, alternate water sources are essential to satisfy water demands. Recycled water applications for this project include irrigation and toilet flushing. Locally available recycled water sources and onsite tertiary treated wastewater effluent options were evaluated. The use of recycled water may reduce potable water demand, decrease the amount of land needed for wastewater effluent disposal, and reduce the amount of wastewater discharged to surface water sources.

Currently, no recycled water is available through the City of Galt and City of Elk Grove municipal services. The City of Galt's treatment system is currently able to meet recycled water standards (as detailed in Section 3 – Regulatory Requirements). However, the City will need to complete the California State permitting requirements before recycled water may be distributed. Recycled water distribution infrastructure will also need to be developed. If the City of Galt's recycled water system becomes permitted in the future, recycled water may be available to offset potable water demand at the Twin Cities Site. Recycled water for the City of Elk Grove is supplied by Sacramento County Sanitation District and distributed by Sacramento County Water Agency (SCWA). SCWA currently supplies recycled water to the Laguna West, Lakeside, and Laguna Stonelake areas in Sacramento County, but no recycled water is currently available for the Mall Site vicinity. Because recycled water is not readily available from the City of Galt and SCWA for the Twin Cities and Mall sites, respectively, these sources were not evaluated.

Where an onsite wastewater treatment plant is utilized, tertiary treated wastewater effluent will be available for recycle. The projected peak daily and annual recycled water availability from an onsite wastewater treatment system is summarized in Table 2-7 and Table 2-8. Recycled water availability was assumed to be equal to wastewater generation. Annual availability was assumed to be the average daily wastewater generation over 365 days.

The anticipated peak daily irrigation and toilet flushing demand is shown in Table 2-7. The potential annual recycled water use was also determined as shown in Table 2-8. Peak daily and annual Irrigation demand was determined as described in Landscape Irrigation Demand (Potable) on page 11, but bioswales and flood and storm detention pond areas were excluded to prevent mixing of stormwater and recycled water. Peak daily toilet flushing demand was determined assuming 30% of the peak wastewater flows. Annual toilet flushing

demand was determined assuming 30% of the average flow over 365 days. Table 2-8 summarizes the annual recycled water demand for each option.

TABLE 2-7 PEAK DAILY RECYCLED WATER SUPPLY AND DEMAND

	Water Demand (gpd)					
	Twin Cities Site			Historic Rancheria Site		Mall Site
Alternatives	**A**	**B**	**C**	**D**	**E**	**F**
Peak Irrigation Demand[1]	61,700	101,000	65,300	118,400	107,500	15,400
Peak Toilet Flushing Demand	92,200	61,300	41,300	91,300	60,100	92,600
Peak Recycled Water Demand	**154,000**	**163,000**	**107,000**	**210,000**	**168,000**	**108,000**
Onsite Peak Recycled Water Availability	**308,000**	**205,000**	**138,000**	**305,000**	**201,000**	**309,000**

Notes:
1. Peak irrigation demand excludes irrigation of flood and stormwater detention ponds and bioswales to prevent mixing of recycled water and stormwater.

TABLE 2-8. ANNUAL RECYCLED WATER SUPPLY AND DEMAND

	Annual Water Demand (gal)					
	Twin Cities Site			Historic Rancheria Site		Mall Site
Alternatives	**A**	**B**	**C**	**D**	**E**	**F**
Irrigation Demand[1]	15,000,000	21,000,000	16,200,000	39,600,000	36,000,000	2,340,000
Toilet Flushing Demand	25,300,000	16,800,000	11,300,000	25,000,000	16,500,000	25,400,000
Total Recycled Water Demand	**40,200,000**	**37,800,000**	**27,500,000**	**64,600,000**	**52,400,000**	**27,700,000**
Onsite Recycled Water Availability	**84,100,000**	**55,900,000**	**37,700,000**	**83,400,000**	**54,800,000**	**84,500,000**

Notes:
1. Annual irrigation demand excludes irrigation of bioswales and flood and stormwater detention ponds to prevent mixing of recycled water and stormwater.

SECTION 3 – REGULATORY REQUIREMENTS

As the alternatives will be Fee to Trust projects, the facilities will be situated on federally titled lands and managed by the Indian tribal government under the control of the United States Government. Federal regulations will govern for this project, though the United States Government may defer to state or local requirements. The relevant water and wastewater system requirements and governing agencies are discussed in this section.

PUBLIC SEWER SYSTEM

Connection to the local public sewer system is beneficial for reducing the operation and maintenance, monitoring, and management needs for a facility. Connection location, sewer and wastewater treatment system capacity, and anticipated facility contributions must be determined in coordination with the local governing agency to evaluate feasibility of connection.

TWIN CITIES SITE (CITY OF GALT)

Currently, the Twin Cities Site does not have the infrastructure to collect and transport wastewater for the proposed developments (Alternatives A, B, and C). The City's wastewater treatment plant is situated closer to the Site than the nearest collection system connection point. Potential conveyance options are discussed in Section 5. The site would require a connection to the City of Galt's sewer conveyance system and wastewater treatment plant. Since this site is not within the City's limits, a Utility Service Agreement would be required. The City and the proposed developer would have to negotiate connection fees, sewer rates, and potentially other costs for increasing the capacity of the City's wastewater treatment plant (WWTP) and collection system. Due to the expected high strength wastewater for the Twin Cities Site alternatives, a "High Strength Wastewater Surcharge" will likely be included in the monthly sewer fee unless the wastewater is pretreated to reduce solids and organic loading. Estimated connection and monthly fees are detailed in Section 5 and Appendix F, City of Galt Water and Sewer Fees and Rates.

MALL SITE (SASD AND SRCSD)

A public sewer connection is currently installed at the Mall Site. Payment of impact fees and monthly usage fees from Sacramento Regional County Sanitation District (SRCSD) and Sacramento Area Sewer District (SASD) will be required for this site. While SRCSD's WWTP has capacity to handle the projected wastewater flows, the SASD's existing sewer lines on the proposed site will likely have insufficient capacity to handle the projected wastewater flows. This would require the installation of a new sewer line connecting from the casino to the Promenade Parkway trunk sewer line (a line conveying more than 1 MGD). The new sewer line would be at the expense of the developer. If the off-site trunk sewer line on Promenade Parkway needs to be upgraded, the construction will be executed by the developer, but reimbursed by SASD. All construction must be coordinated with SASD. More information regarding the trunk sewer upgrade reimbursement can be found in Section 5 and Appendix C. This site has credits from prior payments made by the previous developer toward the connection fees for both SASD and SRCSD. The credits were considered in the calculation of the connection fees.

HISTORIC RANCHERIA (WILTON)

The Historic Rancheria Site was not considered for connection to a public sewer because it is far from existing city sewers. Only onsite wastewater treatment and disposal was considered for this site.

SURFACE LAND DISPOSAL OF WASTEWATER

Surface wastewater disposal to land would not be regulated because the property would be on federal land. The Tribe would use best management practices for monitoring and reporting set by California Title 22 treatment and use standards for recycled water to ensure the health and safety of the public. This includes spray irrigation/disposal and discharge to evaporation or percolation ponds. Typical land disposal requirements are listed below.

- No discharge may enter a surface water body, whether it is through runoff, storm drain infiltration or direct disposal.
- Wastewater must stay within designated areas treatment or disposal areas.
- Wastewater discharge is prohibited during a rain event and the two days following the event.
- Wastewater discharge is prohibited during a high speed wind event to prevent transfer of wastewater to areas outside of designated disposal areas.
- Unpleasant odors generated by the treatment system shall not be noticeable outside the designated treatment and disposal areas.
- Public health setbacks from site features including wells, surface water, and storm drains to the treatment and disposal areas shall be implemented.
- Wastewater quality limits will be determined based on local groundwater quality.

SUBSURFACE DISPOSAL OF WASTEWATER

Subsurface wastewater disposal would be regulated by the USEPA Underground Injection Control (UIC) program for Tribal land. If subsurface disposal is used for the site, the disposal system would be considered a Class V Well. The USEPA requires submittal of a registration form with the description of the disposal system and substance being discharged for Class V Wells. This well category includes standard leach fields, pressure distribution, subsurface drip, or mound systems. Typical subsurface disposal requirements are listed below.

- No discharge may enter a surface water body, whether it is through runoff, storm drain infiltration or direct disposal.
- Wastewater must stay within designated areas for treatment or disposal.
- Unpleasant odors generated by the treatment system shall not be noticeable outside the designated treatment and disposal areas.
- Public health setbacks from site features including wells, surface water, and storm drains to the treatment and disposal areas shall be implemented.
- Wastewater quality limits will be determined based of local groundwater quality.

The advantage of utilizing subsurface disposal over surface disposal is the ability to dispose of water to land during and after rain events. This minimizes the storage volume needed during the wet weather season (typically October to April).

WASTEWATER DISPOSAL TO SURFACE WATER (NPDES)

Disposal of wastewater to a surface water body (Lake, river, creek, etc.) requires a National Pollutant Discharge Elimination System (NPDES) permit; this permit is administered and regulated by the USEPA. This permit

requires the preparation of an analysis to assess the impact of discharged wastewater on the receiving water body. Acquiring a NPDES permit typically takes about one year and discharges are monitored heavily.

RECYCLED WATER (TITLE 22 REUSE)

As with wastewater effluent disposal, recycled water usage would not be regulated because the property would be on federal land . Projects in California on federal land typically defer to the California Code of Regulations Title 22 treatment and use standards for recycled water. Under Title 22, treated wastewater must undergo a filtration and disinfection process that removes 99.999% of pathogens before the wastewater may be recycled. Filtered and disinfected, or disinfected tertiary treated recycled water meeting Title 22 requirements can be used for applications including landscape and food crop irrigation, flushing of toilets and urinals, decorative fountains, firefighting, and in air conditioning and cooling systems. Additional detail on Title 22 wastewater reuse requirements and standards for disinfected tertiary recycled water can be found in Appendix C, Recycled Water Reuse Regulations (Title 22).

MUNICIPAL WATER SYSTEM CONNECTION

Similar to connection to the local public sewer system, connection to a municipal water system is beneficial for reducing the operation and maintenance, monitoring, and management needs for a facility. Connection location, water distribution and treatment system capacity, and anticipated facility demands must also be determined in coordination with the local governing agency to evaluate feasibility of connection. Among the three sites, a municipal water system is available within the vicinity of the Twin Cities Site and the Mall Site.

The Mall Site has an existing onsite connection while the Twin Cities Site does not. The Twin Cities Site is located approximately 1.5 miles from the proposed water treatment facility as described in the 2010 Water Distribution System Master Plan. The Historic Rancheria Site is located approximately 3 miles away from the edge of the City of Elk Grove, and water system expansion to this area is not included as part of the local water agency's (Sacramento County Water Agency) 2005 Water Supply Master Plan. For this reason, the municipal water system connection was not considered for the Historic Rancheria Site. An onsite water system will be required for this site. The onsite water system requirements for the Historic Rancheria Site are described in detail in Section 4 – Water Supply Assessment. A brief summary of the municipal water system connections for the Twin Cities and Mall Site is provided in this section. Additional detail is provided in Section 4 – Water Supply Assessment.

TWIN CITIES SITE

The Twin Cities Site is located in the City of Galt's Sphere of Influence north of Twin Cities Road, where the City's water system is anticipated to expand per the 2010 Water Distribution System Master Plan. As the City's water system is currently at full capacity, the system will need to be expanded to accommodate the project needs. New water supply and distribution infrastructure will need to be developed with the City, potentially taking about one year to complete. For the expansion to occur, the Tribe will need to enter into a Utility Services Agreement to connect to city services, prefaced with the development of a water distribution system analysis. The Utility Services Agreement would identify project development conditions including financing of system expansion, connection fees, and usage rates. The required infrastructure and projected expansion costs, fees, and rates are discussed detail in Section 4 – Water Supply Assessment.

MALL SITE

The Mall Site water supply is managed by the Sacramento County Water Agency (SCWA) and is located in the area designated by the Water Agency as Zone 40. The area is operated and maintained as Zone 41 within the South Service Area located west of Highway 99. A water distribution system constructed by the previous developer in coordination with SCWA has already been installed at the Mall Site.

For a new water system development, SCWA typically requires payment of a Water Development Fee, which includes fees for acreage and for Equivalent Dwelling Units assigned based on the water service line size. The existing infrastructure and projected fees and rates are discussed detail in Section 4 – Water Supply Assessment. Based on discussions with SCWA's Department of Community Development, most of the water system acreage and impact fees have been paid and construction is mostly complete, but the system installation has not been finalized. To utilize the existing infrastructure, water system improvement plans will need to be resubmitted to SCWA and the unpaid difference in Water Development Fees will need to be paid by the Tribe.

ONSITE PUBLIC WATER SYSTEM

Onsite wells are needed to supply water for facility operations where connection to existing municipal water systems is costly or not feasible. For commercial applications, the onsite water system would be categorized as a public water system as defined by the United State Environmental Protection Agency (USEPA), requiring the application of health protection measures. The USEPA regulates public water systems for tribal trust lands, and the USEPA Region 9 office oversees public water systems in the Sacramento County, California area. Ongoing communication with the office shall be implemented as the public water system is developed for this project.

The USEPA does not oversee the construction and permitting of groundwater wells, but requires that public health standards, such as an effectively installed sanitary seal, are in place. The USEPA recommends that public water systems are installed to meet California Department of Public Health or Ten States Standards well standards. The USEPA will primarily establish monitoring and operational requirements. These requirements are typically specific to the project area and category of public water system.

Public water systems are categorized in two ways: (1) community versus non-community and (2) transient versus non-transient. Since all project alternatives have less than 15 buildings (or service connections), the public water systems for all alternatives fall into the non-community category. Because the public water system would regularly serve 25 or more of the same people, the water systems would be classified as non-transient.

The source water monitoring requirements for a non-transient non-community water system typically includes sampling for coliform on a monthly basis and nitrates on an annual basis. Monitoring of inorganic chemicals, volatile organic chemicals, non-volatile synthetic organic chemicals, secondary drinking water standard constituents, and general chemistry including alkalinity, hardness, and minerals are also initially required to establish additional constituents in the public water system's monitoring program. The frequency of sampling for source water quality varies depending on the type of constituent and may potentially be reduced over time should water quality remain consistently below maximum contaminant levels.

SOURCE WATER PROTECTION PROGRAM

Source water protection programs are voluntary for tribes, but implementation is recommended by the USEPA for onsite water systems. Source water protection program objectives include identifying potential contaminants of onsite water sources such as groundwater and surface water and establishing a long term management plan to protect these sources. The USEPA suggests using *Protecting Drinking Water: A Workbook for Tribes* to establish a source water protection program. This workbook details the importance of protecting water sources and provides a guide to implementing a protection plan. In addition to providing protection directly at the source, it is recommended that local setbacks be maintained between onsite water and wastewater systems. Sacramento County setback requirements have been included in Appendix C, Sacramento County Setback Requirements.

SECTION 4 – WATER SUPPLY ASSESSMENT

The water supply options were evaluated for each site. The feasibility of municipal connection and utilizing onsite water supply wells are described in this section.

MUNICIPAL WATER CONNECTION

The feasibility of connecting to a city water supply was evaluated for each site based on proximity to a municipal connection point, available system capacity, and connection requirements. Utilization of a municipal water supply is feasible for the Twin Cities and Mall Sites, whereas the Historic Rancheria Site is too far from surrounding municipal water systems for connection to be feasible. Therefore, connection to a municipal water system was not assessed for the Historic Rancheria Site.

TWIN CITIES SITE

The Twin Cities Site is located within the City of Galt's sphere of influence and is less than one mile away from the edge of the City limits. The City is the water service provider and manages a water system comprised of eight active well sites with a total capacity of approximately 9,000 gallons per minute (gpm) and one stand-by well with a capacity of 1,500 gpm based on communication from the City of Galt. The total pumping capacity is approximately 10,500 gpm, with all groundwater originating from the Cosumnes Sub-basin (2009 Municipal Service Review report prepared by the City of Galt Community Development Department). Water treatment needs include iron, manganese, and arsenic removal, in addition to chlorine disinfection. The system has a total of 9 million gallons of storage capacity, with two 3 million gallon storage tanks on the north and south sides of the city and two 1.5 million gallon storage tanks on the western edge of the city.

Currently, the City's water system is at full capacity. Average day demand (ADD) is projected to be 9 million gallons in 2015 based on the 2010 Water Distribution System Master Plan (WDSMP) prepared by Carollo for the City of Galt. The projected water system developments to be completed by 2015 include the addition of another 3 million gallon tank on Di Maggio Way and five wells around the central and southern edges of the city limits. Water system upgrades near the Twin Cities Site is not projected to occur until between 2026 through 2030. Coordination and negotiation with the City and development financing is required to expand the municipal water system in the Twin Cities Site vicinity and to connect to the City's water system. A projected water system expansion plan included in the WDSMP prepared by Carollo Engineers has been enclosed in Appendix A, Site Plans & Water and Wastewater Treatment System Schematics.

Additional water treatment facilities and infrastructure servicing the Twin Cities Site vicinity is detailed in the City's WDSMP. The expanded water system that would serve the area is consistent with Phase 4 of the WDSMP and includes three wells, a water treatment system, and a storage tank on Bergeron Road, located north of Twin Cities Road. According to the 2010 WDSMP, these components would add approximately up to 6 million gallons per day to the well supply capacity. The proposed expanded City water system components, sizing, and costs projected in the City's Master Plan are detailed in Table 4-1. Figure 4-1 shows the treatment and distribution system components with labels as described in Table 4-1 and Table 4-2.

FIGURE 4-1. CITY OF GALT WATER CONNECTION

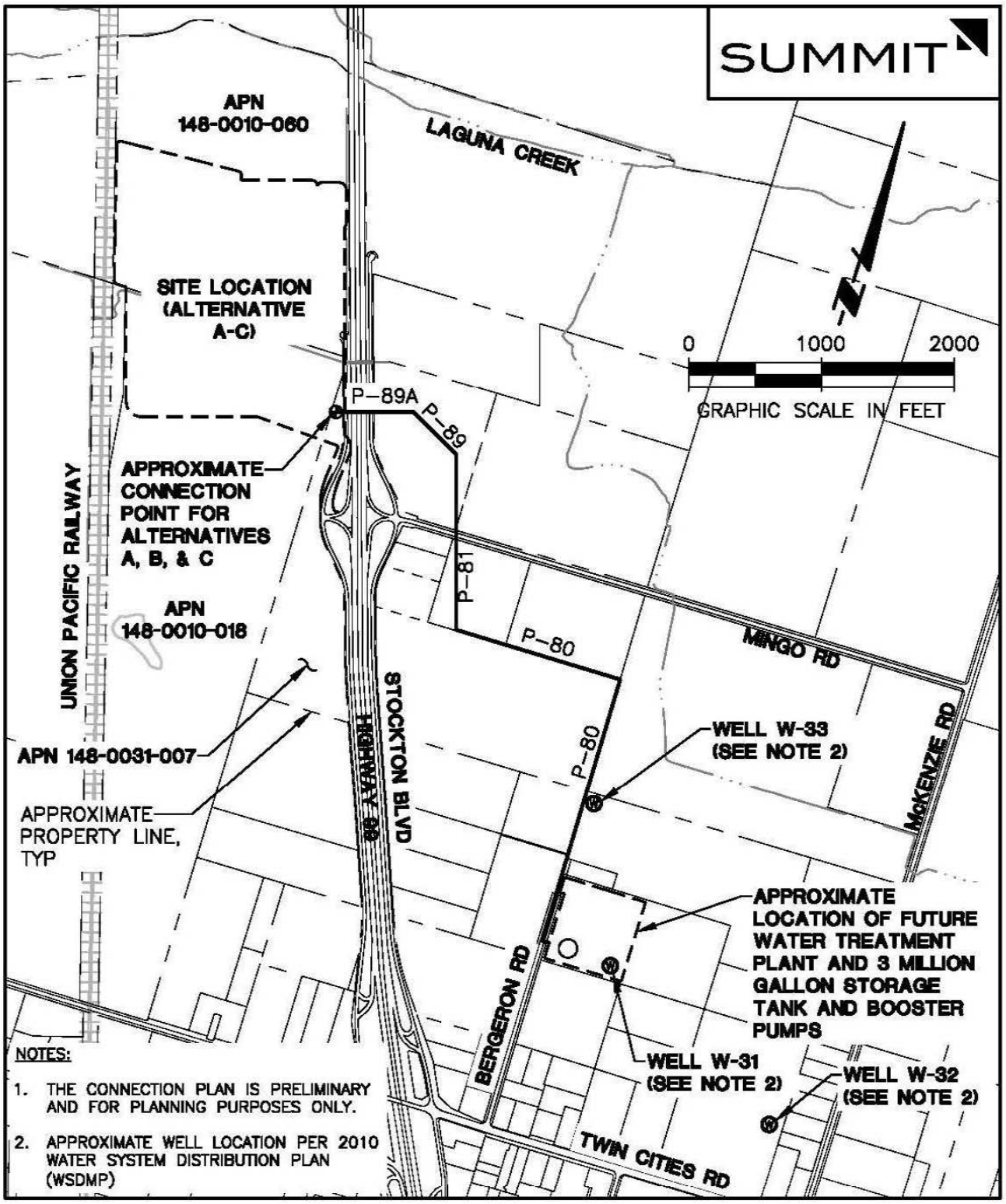


TABLE 4-1. CITY OF GALT MASTER PLAN WATER SYSTEM EXPANSION COMPONENTS

Water System Component	Capacity	Capital Improvement Cost
Well (W-31)	1,400 gpm	$2,113,000
Well (W-32)	1,400 gpm	$2,113,000
Well (W-33)	1,400 gpm	$2,113,000
Water Treatment System (WTP-6)	4,200 gpm	$9,750,000
Storage Tank (T-2)	3 million gallons	$6,581,000
	Total	**$22,670,000**

Note: Water system components (including labels), sizing, and costs are as described in the City of Galt's Water Distribution system Master Plan prepared by Carollo Engineers in May 2010.

TABLE 4-2. WATER DISTRIBUTION ROUTING FROM TREATMENT PLANT TO TWIN CITIES SITE

Master Plan Distribution Line Label	Diameter (in)	Length (ft)	Capital Improvement Cost
P-80	16	4,450	$1,276,000
P-81	16	1,450	$218,000
P-89	16	950	$273,000
P-89A	16 (with 30" casing)	200	$361,000
	Total	**7,050**	**$2,128,000**

Note: Water distribution system components (including labels), sizing, and costs are as described in the City of Galt's Water Distribution system Master Plan prepared by Carollo Engineers in May 2010. See Appendix A for the Proposed Capital Improvements plan by Carollo Engineers.

The Bergeron Road planned water treatment facility is located approximately 1.5 miles from the Twin Cities Site. The WDSMP details the anticipated water distribution lines north of Twin Cities Road. Each pipeline segment is designated a name and estimated capital improvement cost. The approximate water distribution system routing was selected based on the future WDSMP distribution system to connect the Twin Cities Site to the water treatment plant. The well and water treatment facility and water distribution system tables from the WDSMP are included in Appendix F, Water and Wastewater Fee Schedules, further detailing the distribution pipe line and treatment system length and costs. Expansion of the water system would have to be initiated and financed through negotiations with the City of Galt. A new water supply and distribution system analysis prepared by the Tribe would need to be completed and a utility service agreement finalized with the City of Galt to guarantee water service.

Until negotiations are completed and a service agreement reached, system upgrade financing and connection fees can only be approximated. Typical water system fees for the City of Galt include a one-time connection/capacity fee and monthly usage fees with a 25 percent surcharge required for a facility that is located outside of the city limits. Assuming a 6 inch building water supply line and a 6 inch irrigation water supply line for the facility are sufficient to supply the anticipated maximum daily building and irrigation demands, the connection fees based on 2014 rates were identified as shown in Table 4-3. Monthly usage fees calculated based on 2014 rates are shown in Table 4-4. Monthly water usage was determined by assuming the average daily flow for Alternative A (Twin Cities Site alternative with the highest MDD) over 31 days during the month of July when irrigation demands are highest.

TABLE 4-3. CITY OF GALT CONNECTION FEES (2014 RATES)

Use	Anticipated Peak Flow (gpm)	Supply Meter Size (in)	Approximate Capacity Fee
Building	469 (peak daily flow over 12 hrs)	6	$96,165
Irrigation	204 (peak daily flow over 8 hrs)	6	$96,165
		Approximate Total Capacity Fee	**$192,330**

TABLE 4-4. CITY OF GALT MONTHLY USAGE FEES (2014 RATES)

Use	Base Rate ($)	Cost per 100 Cubic Feet ($)	Peak Monthly Water Usage (ft^3)	Approximate Metered Fees
Building	41.20	1.20	1,050,312	$12,644.94
Irrigation	41.20	1.20	405,542	$4,907.71
			Subtotal Meter Monthly Meter Fees	$17,552.65
			Extra District Account Fee (25%)	$4,388.16
			Approximate Total Meter Monthly Meter Fees	**$21,941**

MALL SITE

Water system infrastructure has already been installed at the Mall Site, so an onsite water system for the Mall Site was not evaluated. The water supply is managed by the SCWA and is operated and maintained as Zone 41 within the South Service Area.

SCWA potable water originates from a combination of surface and groundwater sources, with groundwater currently being the primary source. Groundwater is drawn primarily from the North, Central, and South American Sub-basins, with the South American Sub-basin serving the South Service Area. Water sources supplemental to groundwater include appropriative water from the American and Sacramento Rivers and Central Valley Project Water. SCWA water quality is generally good with the occasional need to treat for iron and manganese in groundwater sources.

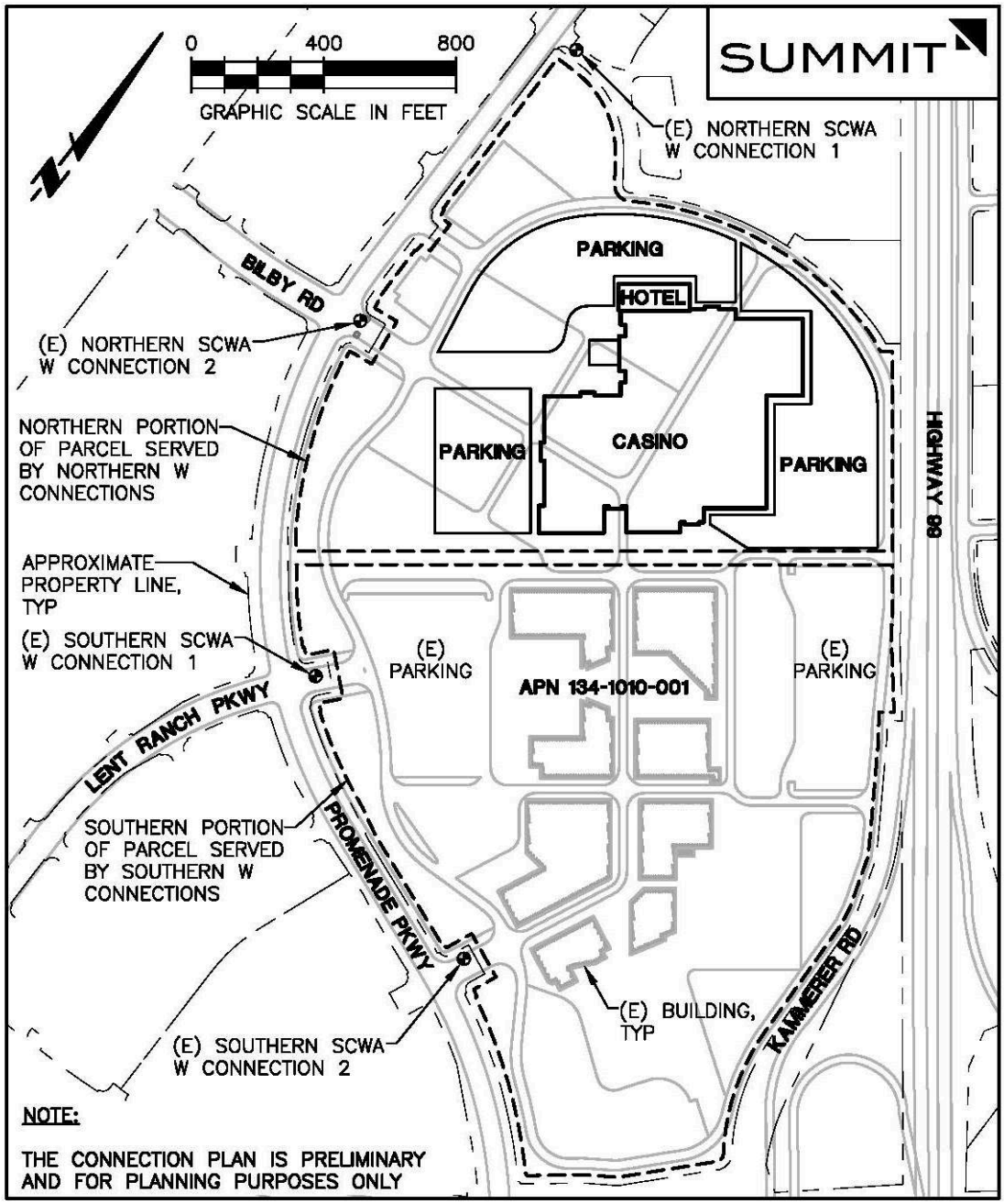
The Mall Site is connected to the SCWA water distribution system through four connection points on Promenade Parkway. The SCWA distribution lines are located immediately outside of the Mall Site access driveways and are each 12 inches in diameter. Assuming that water is transferred at a rate of 2 feet per second, each 12 inch pipe would be able to deliver approximately 700 gpm. These distribution lines are more than capable of delivering the daily water demand associated with Alternative F. SCWA guarantees 35 psi at all times, although up to 90 psi may be available during off-peak usage periods.

An existing network of water system piping running throughout the Mall Site connects to the 12 inch distribution mains, and contains meters, fire protection sprinkler and hydrant connections, and blow-off points. The pipe sizes within the network are anticipated to range between 1.5 and 3 inches in size based on communications with SCWA. Actual pipe sizes for the existing piping network could not be obtained through public records.

To understand the required water service size capable of delivering the proposed water demands and approximate development fees, the casino portion of the facility is assumed to be served by the two of the

four connection points on the northern portion of the property. The other two connection points on the southern portion of the property are assumed to serve the retail buildings on the southern portion of the property (outside the project site). It is assumed that these connections will not provide water service to the project site. The southern connections were still considered in facility connection fee, since connection fees are determined based on connection of the entire parcel. See Figure 4-2 for the northern and southern portions of the site and the respective service connections.

FIGURE 4-2. MALL SITE WATER CONNECTION LOCATIONS AND ASSUMED SERVICE



Two 4 inch connections to the two northern 12 inch SCWA distribution pipes will be needed to provide sufficient water flows to the casino facility at peak instantaneous water demand. The other two connections to the 12 inch SCWA distribution mains are assumed to be 3 inches in size to estimate development fees. The estimated development fees are summarized in Table 4-5. Based on anticipated monthly water demand, the usage fees were estimated using 2014 rates as shown in Table 4-6. Monthly water usage was determined by assuming the average daily flow for Alternative F, during the peak irrigation month (July) over 31 days. The flows for the project were assumed to enter evenly between the two connection points serving only the northern portion of the facility. Water usage for the buildings on the south side of the property was not evaluated since they are outside of the scope of this project.

TABLE 4-5. ALTERNATIVE F SCWA CONNECTION DEVELOPMENT FEES

Fee Type	Size	Quantity	EDU Equivalent per Connection [4]	Cost Per Unit	Approximate Fee
EDU-Based	4 in	2	16	$13,965 per EDU	$446,880
EDU-Based	3 in [1]	2	9	$13,965 per EDU	$251,370
Acreage-Based	101 acre [2]	n/a	n/a	$8,521 per acre	$860,621
				Approximate Total Development Fees	**$1,558,871** [3]

Notes:

1. Although the southern water connections are assumed to serve only the existing southern buildings, the connections are included in the development fees per SCWA fee determination methods.
2. The size of the entire parcel, 134-1010-001-0000, is used to determine the acreage-based fee per SCWA fee determination methods.
3. A credit will be applied to this fee based on the development fee already paid by the previous developer for this property.
4. EDUs are assigned based on pipe size per Sonoma County Water Agency Water Development Fee Policy (see Appendix F).

TABLE 4-6. ALTERNATIVE F SCWA CASINO MONTHLY USAGE FEE

Connection[1]	Meter Size (in)	Base Rate ($)	Water Usage (gal)	Cost per 748 gallons	Total Monthly Fee
1	4	166.70	4,183,781	1.09	6,263.39
2	4	166.70	4,183,781	1.09	6,263.39
				Approximate Total Monthly Usage Fee	**$12,527**

Notes:

1. Only the northern connections were considered in the monthly usage fee, since the southern connections are assumed to be associated with the existing building operations.

TWIN CITIES SITE GROUNDWATER

An onsite water system would offer reduced capital costs compared to a city water connection, but will require onsite management, operation, and maintenance. Based on groundwater investigations by Applied Engineering and Geology, Inc., agricultural irrigation use is higher than anticipated water demand for Alternatives A, B, and C. Onsite water system feasibility is detailed in this section for the Twin Cities Site. Water quality, depth, treatment options, and storage requirements are discussed.

WATER QUALITY AND DEPTH

Limited water quality and depth information is available from public water systems in the Twin Cities area. To identify water quality and depth, the Sacramento County Environmental Health (SCEH) database was reviewed and the City of Galt Public Works Department was consulted. Groundwater depth information is available near the facility through the Department of Water Resources Water (DWR) Library database. Based on historic data and City of Galt water quality, groundwater in the region is typically high in iron, manganese, and sometimes arsenic. Before water treatment needs may be determined, actual water quality will need to be identified for the site. Groundwater depth in the vicinity of the Twin Cities Site over the past five years has varied between 80 and 88 feet below ground surface. Additional groundwater depth information collected from the DWR database has been included in Appendix D, Twin Cities Site Groundwater Depth and Quality.

Historic information located from SCEH's database provided water quality from 1980 and 1988 for a correctional facility public water system located at the corner of Twin Cities Road and Midway Rd. The facility is about 0.9 miles southwest from the Twin Cities project area, and utilizes a well that is 500 feet deep. Among the constituents tested in the 1980s, only manganese exceeded maximum contaminant limits. Well water quality and the well permit are included in Appendix D for reference.

Because the correctional facility water quality data is from the 1980s, the water quality identified for the City of Galt was additionally considered. For the Twin Cities Site, water quality data was reviewed for the City of Galt's Golden Heights Well 17 located about 1.5 miles southeast from the site. Based on the 2010 City of Galt Urban Water Management Plan, this well is 930 feet deep. Well water quality data, current as of January 24, 2014, provided through the California Department of Public Health database for Sacramento County, indicates groundwater with high iron, manganese, and arsenic concentrations, consistent with the feedback from the City of Galt Department of Public Works. The Urban Water Management Plan notes that a well drilled at 1,700 feet to a new aquifer had low levels of arsenic. Commercial facilities due not typically utilize wells as deep as 900 to 1,700 feet, so it is important to note that the groundwater quality may differ depending on location and depth.

TREATMENT REQUIREMENTS

Since groundwater at the Twin Cities Site may potentially be high in iron, manganese, and arsenic, the removal of these constituents is assumed to be required for this study. The water treatment system will first utilize chlorine disinfection to disinfect and provide oxidation. A pH and oxidation-reduction potential sensor may be used to control the amount of chlorine used, minimizing the potential for disinfection byproduct formation. The disinfected water will then be sent through a manganese and iron removal filter followed by an arsenic removal system before being sent to the distribution system.

Iron and manganese may be removed with technologies such as glauconite greensand filters coated with manganese oxide. The coated media oxidize iron and manganese and cause the constituents to precipitate and become trapped in the filter bed. Arsenic removal may be achieved using media adsorption, coagulation and filtration, or oxidation filtration methods. A schematic diagram of a potential water treatment system for the Twin Cities Site has been included in Appendix A, Site Plans & Water and Wastewater Treatment System Schematics. Groundwater quality testing must be performed to verify the water quality at the site before actual treatment requirements can be determined. The recommended treatment requirements provided here are for planning purposes only.

STORAGE AND PUMP STATIONS

For public water systems, providing a storage capacity of at least the MDD is typically recommended for good practice and is required for state regulated facilities under the California Code of Regulations, Title 17 Section 64554. Storage will be provided for the each alternative equal to or greater than the maximum daily demand with 2 feet of freeboard. The storage volumes, assuming fire storage is provided separately, for the three Twin Cities alternatives are shown in Table 4-7 for cylindrical bolted carbon steel tanks. See Table 2-5 and Table 2-6 for combined water and fire storage tank requirements. Tank volumes are preliminary and for planning purposes only.

TABLE 4-7 TWIN CITIES SITE WATER STORAGE TANK VOLUMES (EXCLUDES FIRE STORAGE)

Alternative	A	B	C
MDD (gal)	437,000	363,000	259,000
Nominal Tank Height (ft.)	20	20	20
Nominal Tank Diameter (ft.)	65	65	54

Water will be transferred using a well pump at the well head and a duplex pump station at the water storage tank. Fixed or variable speed pumps may be used depending on the available pump options for meeting average and peak flows. The pump station and a hydro-pneumatic tank will supply pressure to the distribution system. Additional pump stations may be used depending on the configuration of the treatment system. Approximate well and pump station locations are shown in the Twin Cities site plan in Appendix A, Site Plans & Water and Wastewater Treatment System Schematics.

HISTORIC RANCHERIA SITE GROUNDWATER

An on-site groundwater supply will need to be utilized for the Historic Rancheria site since the site is far from municipal water systems. Based on groundwater investigations by Applied Engineering and Geology, Inc., historical water use at the site was higher than anticipated water demand for Alternatives D and E. Onsite water system feasibility is detailed in this section for the Historic Rancheria Site. Water quality, depth, treatment options, and storage requirements are discussed.

WATER QUALITY AND DEPTH

The SCEH and DWR databases were reviewed to identify water quality and depth at the Historic Rancheria Site. Based on water quality data from 1995 for the Cosumnes River Indian Association (CRIA) well that is located within a half mile from the Historic Rancheria site, water quality is anticipated to be good. No water quality constituents tested in 1995 exceeded the maximum contaminant limits. The well construction and water quality data from the CRIA well is included in Appendix E, Historic Rancheria Site Groundwater Depth and Quality. Historic water quality for the area was also located from the Department of Water Resources (DWR) online water library database. Water quality from sites located between approximately 0.9 and 3 miles from the project site were reviewed, ranging from the years of 1955 to 1989. In all wells, no constituents tested exceeded maximum contaminant limits. The average and maximum concentrations identified at these wells are summarized in Appendix E along with a screen shot of the DWR database map identifying the wells reviewed. Before actual water treatment needs may be identified, water quality will need to be identified at the site.

The CRIA well is 196 feet deep and the depth to static water level was identified at 92 feet in 2002. This is fairly consistent with groundwater depths identified for the onsite irrigation well on the DWR database. Groundwater depths for the irrigation well were identified between 72 and 90 feet from 1996 through 1998. See Appendix E for additional groundwater depth information from the DWR database.

TREATMENT REQUIREMENTS

Since no constituents of concern were identified at wells in the vicinity of the site, only disinfection will be required for the Historic Rancheria Site. Disinfection is typically accomplished using chlorine disinfection. A pH and oxidation-reduction potential sensor may be used to control the amount of chlorine used, minimizing the potential for disinfection byproduct formation. Groundwater quality at the facility must be verified before actual treatment requirements may be identified. The recommended treatment requirements provided here are for planning purposes only. A schematic diagram of a potential water treatment system for the Historic Rancheria site has been included in Appendix A, Site Plans & Water and Wastewater Treatment System Schematics.

STORAGE AND PUMP STATIONS

Similar to the Twin Cities Site water storage system described in Section 2, a storage capacity of at least the MDD with 2 feet of freeboard will be provided for the each alternative. The storage volumes, assuming fire storage is provided separately) for the two Historic Rancheria alternatives are shown in Table 4-8 for cylindrical bolted carbon steel tanks. See Table 2-5 and Table 2-6 for combined water and fire storage tank requirements. Tank volumes are preliminary and for planning purposes only.

TABLE 4-8 HISTORIC RANCHERIA SITE WATER STORAGE TANK VOLUMES (EXCLUDES FIRE STORAGE)

Alternative	**D**	**E**
MDD (gal)	596,000	458,000
Nominal Tank Height (ft.)	20	20
Nominal Tank Diameter (ft.)	80	72

Water will be transferred using a well pump at the well head and a duplex pump station at the water storage tank. Fixed or variable speed pumps may be used depending on the available pump options for meeting average and peak flows. The pump station and a hydro-pneumatic tank will supply pressure to the distribution system. Approximate well and pump station locations are shown in the Historic Rancheria site plan in Appendix A, Site Plans & Water and Wastewater Treatment System Schematics.

SECTION 5 – WASTEWATER ASSESSMENT

This section reviews the influent water quality, the wastewater collection system, a general overview and configuration of an onsite WWTP, and available approaches for wastewater disposal. All information in this section is preliminary and should only be used to determine feasibility and to help with the planning process.

WASTEWATER QUALITY

The influent wastewater quality for the proposed alternatives will differ from typical domestic wastewater because of the higher strength wastewater that is generated from restaurants. All assumptions for wastewater quality can be found in Appendix B, Water & Wastewater Design Assumptions & Calculations. The projected wastewater quality can be found in Table 2-1.

INTERNAL WASTEWATER COLLECTION SYSTEM

The wastewater collection system will be designed to provide low maintenance and no infiltration or exfiltration. All piping should be meet Uniform Plumbing Code and local requirements. All kitchens should have grease interceptors to limit the fats, oils, and grease (FOG) from entering the treatment plant; automatically cleaning grease interceptors are recommended. All sewer lines should flow by gravity to a sump. The associated pump would need to handle peak instantaneous flows to make sure no overflows occur in the sump.

ONSITE WASTEWATER TREATMENT

A membrane bioreactor (MBR) is proposed for the use under the onsite WWTP option. The treatment plant should be able handle at least the amount of a peak day flow event. The WWTP capacity shown in Table 5-1 provides a design flow about 25% higher than the projected peak day flows. This sub-section will review the components needed for this type of treatment process.

HEADWORKS

The headworks for the onsite WWTP will utilize fine screens. Fine screens are necessary to keep any inert solids from coming into contact with the membranes; as they could damage the membranes. Fine screens should have 1 to 2 mm openings. Smaller openings are preferred so that fewer solids will enter the reactor area; reduced solids contact prolongs the life of the membranes. All solids removed from the headworks would be put into a solids tank for offsite disposal. Disposal would occur at an appropriately permitted facility. Since the headworks would be located before the equalization tank, they would need to be designed to handle peak instantaneous flow. This is preferable to placing the headworks after the equalization tank because fine screens are typically inexpensive and reduce the mixing and cleaning requirements for the equalization tank.

EQUALIZATION

Equalization tanks should be utilized to reduce peak instantaneous hydraulic and organic loading rates on the MBR. It can also distribute peak day flows over multiple days, which would reduce the sizing requirements for the MBR and subsequent treatment system components.

MEMBRANE BIOREACTOR SYSTEM (MBR)

The MBR treatment process is recommended due to its compact size, high quality effluent, and limited operational support. An MBR eliminates the large footprint and settling issues of clarifiers. A MBR's most appealing feature is that the effluent can be turned into recycled water, when coupled with proper disinfection. Water recycling reduces potable water consumption and the area needed for wastewater disposal.

Within the MBR treatment system, the wastewater first enters an anoxic tank. The nitrate (NO_3) rich membrane tank recycles flow back to the anoxic tank where a carbon rich influent wastewater converts nitrate into nitrogen gas (See the Wastewater System Schematic in Appendix A). This is called denitrification, which is the conversion of nitrate to nitrogen gas and occurs in the absence of free oxygen and in the presence of denitrifying bacteria and a carbon source.

The wastewater then flows to the aeration tank where BOD and ammonia (NH_3) are consumed by bacteria, producing more bacteria in addition to carbon dioxide or nitrate. These reactions occur in the presence of oxygen and remove BOD faster than in an anoxic environment. Air is supplied by a series of blowers to a fine bubble diffuser system within the aeration tank.

Wastewater then enters the membrane tank. Here the microfiltration membrane, with pore sizes between 0.1µm and 1.0µm, will separate the water from the mixed liquor. For the water to pass through the membranes, a permeate pump is needed to provide suction. The water that passes through the membrane is called permeate. The remaining mixed liquor will be wasted periodically to maintain a desired solids concentration. Some of the wastewater is recycled back to the anoxic and aeration zones. The high concentration of solids and the suction required to pass water through the membrane creates a solids accumulation on the membranes, so an air scouring system must be installed. The air scouring system provides coarse bubbles to the bottom of the membrane, removing a majority of the accumulated solids. Any remaining solids that may clog the pores of the membranes are removed during a back flush. The permeate water is used for back flushing. This is done periodically throughout the day and is typically controlled by pressure drops through the membrane. Approximately every six months, the membranes must be extracted and chemically cleaned. Clean-In-Place cleaning may also be included.

DISINFECTION

A combination of ultraviolet (UV) and chlorine disinfection is recommended to ensure the inactivation of pathogens. UV disinfection will be used to treat wastewater to meet Title 22 disinfection standards. Any non-chlorine based disinfecting process must be able to achieve 5-log reduction (99.999% inactivation) of bacteria. A Title 22 approved UV disinfection unit shall be used. All UV lamps must be submerged at all times to keep the lamps from overheating. Recycling the permeate may be needed to keep the UV lamps cool during periods of low or no flow.

Additional chlorine disinfection using sodium hypochlorite is recommended due its low cost, effective disinfecting properties, minimal safety requirements, and ability to leave a disinfectant residual for continued disinfection downstream. This added disinfection step provides a safety factor for meeting Title 22 requirements and reduces customer concerns about the safety of recycled water. This chlorine contact tank can also be used to provide redundancy and act as the primary disinfecting process, while the UV process is undergoing maintenance. When acting as a primary disinfecting process, it would need to provide a CT value

of 450 mg-min/L and a modal contact time of 90 minutes. The CT value is the product of measured chlorine residual and modal contact time at a single point. A typical dosing concentration for this would be 5 to 10 mg/L. When the system is acting as a secondary disinfecting process, a dosing concentration of 2 to 4 mg/L of sodium hypochlorite should be used to keep a residual disinfectant in the recycled water.

Disinfection systems should be designed to meet Title 22 tertiary disinfected standards. If it is not deemed economical, a single process may be used.

SOLIDS DISPOSAL

All wasted mixed liquor should be stored in an aerated sludge storage tank. Aerobic digestion may be required unless the plant operates in extended aeration mode. The wasted sludge can be dewatered by a belt filter press to reduce hauling weight and volume. All dried solids from the mixed liquor would then be put in a solids tank. All solids would be hauled off to a permitted landfill approved to handle biosolids. All liquids extracted from the sludge would be sent back to the fine screens for treatment. If it is more economical to dispose of the raw mixed liquor without the dewatering process, then that option would be pursued.

ONSITE WASTEWATER DISPOSAL

This sub-section reviews all onsite wastewater disposal options for each alternative at the Twin Cities and Historic Rancheria sites: subsurface disposal, a combination of surface and subsurface disposal, and surface water discharge, and connection to a public sewer system. A summary of the onsite treatment capacities and disposal area can be seen in Table 5-1. Alternative F has been excluded since an onsite wastewater treatment system was not considered.

TABLE 5-1 SUMMARY OF SIZING FOR THE ONSITE WASTEWATER TREATMENT PLANTS, STORAGES TANKS, AND ONSITE DISPOSAL AREAS

	Twin Cities Site			Historic Rancheria Site	
Alternatives	**A**	**B**	**C**	**D**	**E**
WWTP Capacity (GPD)	385,000	255,000	175,000	385,000	250,000
Treatment Plant Equalization Volume (gallons)	200,000	150,000	80,000	200,000	150,000
Recycled Water Reuse Tank (gallons)	160,000	170,000	110,000	220,000	175,000
Effluent Disposal Tank Volume Subsurface Disposal Only (gallons)	200,000	150,000	80,000	N/A	N/A
Effluent Disposal Tank Volume Surface and Subsurface Disposal (gallons)	550,000	550,000	550,000	N/A	N/A
Effluent Disposal Tank Volume Surface Water Disposal (gallons)	N/A	N/A	N/A	200,000	150,000
Surface and Subsurface Disposal Acreage (Surface/Subsurface)	6.2/16.6	6.2/11.0	6.2/6.3	N/A	N/A
Subsurface Disposal Only Acreage	21.7	15.0	9.5	N/A	N/A
Surface Water Discharge	No	No	No	Yes	Yes

EFFLUENT PUMPING AND STORAGE

After the effluent has passed through all treatment processes, it must be transported to a storage tank. The permeate pumps will send effluent to a sump where the effluent will then be pumped into an aboveground storage tank. The effluent storage tank for surface and subsurface disposal shall be large enough to hold effluent in excess of the subsurface disposal capacity, since the drip field is not sized to dispose of peak flow events. The 550,000 gallon tank in Table 5-1 represents 20 days of excess storage for peak flows during rain events (no surface disposal allowed). The same tank would be used for surface and subsurface disposal. The effluent storage for subsurface disposal only and surface water discharge need to be half of the peak day wastewater flows. The subsurface drip only disposal field will be large enough to dispose of all recycled water, so no additional storage is needed. A separate storage tank for toilet flushing and landscape irrigation would hold one day of peak treated water reuse demand (See Table 2-7). Minimal storage capacity is needed because subsurface drip disposal allows for land application during rain events.

LAND DISPOSAL

Because the wastewater treatment plant produces tertiary treated recycled water, the treated effluent will meet Title 22 water reuse standards. Two land disposal options were considered based on available areas for onsite recycled water use and disposal volume: a combination of surface spray (sprinklers) with subsurface drip disposal (pressurized drip tubing) and subsurface drip disposal only. Using surface spray disposal alone was not evaluated because of the large storage volumes required during the wet weather season. As described in Section 3, surface disposal will primarily be used during the dry weather season. Only limited use is permitted during the rainy season (October to April), with surface spray disposal prohibited during rain events

and the days following a rain event. Further evaluation during project design may be conducted if disposal through surface spray disposal alone is preferred.

Both surface and subsurface disposal options have their advantages. Surface spray disposal is advantageous over subsurface disposal since plants uptake a portion of the water (allowing more water to be applied and reducing the potential for runoff), beneficial reuse of water may be implemented, reduced maintenance requirements, and cost effectiveness. To minimize the need for a large storage volume, subsurface drip disposal should be used. Subsurface drip disposal can be applied during wet weather periods, so wastewater can be disposed of year round. As mentioned in Section 3, the USEPA UIC program will be in charge of regulating any subsurface disposal. Though it is not recommended, subsurface drip disposal can be used under parking lots. This should only be used if there are no other disposal areas and if the site soils are deemed suitable.

Since all of the wastewater will be treated to tertiary disinfected recycled water standards, some surface disposal will occur through landscape irrigation. The recycled water must be applied to the disposal fields at less than agronomic rates to prevent over saturation of the soil. All spray disposal fields will be setback from any water bodies to make sure that runoff does not reach waters of the United States. The surface spray disposal fields are located in areas previously used for agriculture with existing berms to keep excess water from running offsite.

The size of the disposal fields for each alternative can be seen in Table 5-1 Summary of Sizing for the onsite Wastewater Treatment Plants, Storages Tanks, and onsite Disposal Areas. Table 5-1 was determined by assuming an infiltration rate for silt loam soils. The United States Department of Agricultural (USDA) Web Soil Survey identified silt loam soils at all sites. Silt loams have an application rate of 0.4 gpd/ft^2 (0.64 in/day) according to Sacramento County design guidelines. If during a soil evaluation, clay or less permeable soils are found, the infiltration rate would decrease and the required disposal area would increase. If more permeable soils are found, the infiltration rate would increase and the required disposal area would decrease. If clay soils are found, the Sacramento County design guidelines show an application of 0.2 gpd/ft^2 and the the maximum size of the disposal field would be 36.2 acres (for Alternative A). The site has over 80 acres of potential disposal area, so there should be more than sufficient disposal area in the event that clay soils are found under any alternative. The sizing of the disposal systems were also based on additional factors. For the subsurface drip disposal only option, the field was sized to dispose of two times the annual average disposal flow to avoid over saturation of the soil and to handle peak WWTP flows. The surface spray and subsurface drip option's disposal fields were sized based on both systems running during dry weather and only the subsurface drip disposal system being used during rain events. The subsurface drip part of the disposal option was sized to handle average day disposal flows, but not peak day flows. All peak flow can either be stored in the effluent storage tank or used in the surface disposal system (if allowed).

Due to the size of the Twin Cities site, required disposal areas are available. Water balances for Alternatives D and E, show that the Historic Rancheria site does not have enough land to dispose of all expected wastewater. The Historic Rancheria site will likely have to discharge to a surface water source (discussed in the next section). A water balance, which shows the disposal of water on land, for each alternative can be found in Appendix B, Water & Wastewater Design Assumptions & Calculations. The spray disposal field areas for each alternative are included in Appendix A, Site Plans & Water and Wastewater Treatment System Schematics.

SURFACE WATER DISCHARGE (NPDES)

Discharge of the development's wastewater to a surface water source is not a recommended if land application is a viable option. Due to the size of the Twin Cities site, surface water discharge was not considered. The Historic Rancheria Site has limited area for land disposal and wastewater at that site would likely have to be discharged to the Cosumnes River, located to the north of the site. A proposed discharge line can be seen in Appendix A and it is estimated that the discharge line would be 6" and approximately 1,100 feet for both Alternatives D and E. The pump station should be designed to handle approximately 450 gpm and 300 gpm for Alternatives D and E, respectively. The proposed line would run along the north side of the site and discharge into the Cosumnes River. The flow discharged to the river will be metered and tested to make sure violations to the NPDES permit do not occur.

OFF-SITE WASTEWATER RREATMENT AND DISPOSAL

CONNECTION TO THE CITY OF GALT

Currently, the Twin Cities Site and vicinity do not have the infrastructure to transport wastewater from the proposed developments for Alternatives A, B, and C to the City sewer system. Off-site improvements would be required to discharge to a proposed sewer. The City's Collection System Master Plan (CSMP) Phase 3 and 4 expansions provide options for connecting to proposed sewer lines. See Figure 5-1 for the approximate point of connection to the City's proposed Phase 3 and 4 sewer system. The installation date of this proposed sewer may be negotiable because the time frame in the CSMP was designed for planning purposes. As mentioned in Section 3, in order for the proposed development to connect to the City of Galt's sewer system, a Utility Services Agreement would need to be developed before the City would begin capital improvements on their collection system and treatment plant.

Options to connect to the City of Galt's system can be seen in Figure 5-1. In both options, the wastewater would flow by gravity to a pump station near the northwest corner of the site and then be pumped through a 6 inch force main. Option 1 would pump the wastewater to the City's proposed 10 inch gravity sewer (titled C-6 in the CSMP), which is located on the proposed site (see the CSMP map in Appendix A). The wastewater would then flow to an 18 inch sewer main (titled C-1 in the CSMP) and then to a pump station (titled C-LS in the CSMP). Option 2 would pump the wastewater west, underneath the railroad tracks and then south to the City's WWTP. Table 5-2 describes the approximate force main lengths, flow, and total dynamic head (TDH) requirements as well as the estimated connection and monthly fees for each alternative. Table 5-2 also includes the projected costs for C-6, C-1, C-8, C-8A, and C-LS as labeled in the City's CSMP for Option 1. These costs are infrastructure improvements needed to complete Option 1.These costs were provided to give insight on the potential development requirements (if any) for connection to the City's sewer system. Option 1 could be funded by the Tribe, but future upstream users could provide the remaining funding. These costs were not considered for Option 2 because of a direct connection to the WWTP, which would not require infrastructure from the CSMP. Calculations for the estimated connection and monthly fees as well as the projected costs from the CSMP can be found in Appendix F. The two options mentioned above are not the only means oftransporting wastewater from the site to the City of Galt's wastewater treatment plant; other options may be considered during the design phase of the project.

TABLE 5-2 CITY OF GALT SEWER CONNECTION INFORMATION

Twin Cities Site Alternatives	**A**	**B**	**C**
Sewer Connection Fee	$10,699,000	$7,109,000	$4,791,000
Monthly Fee	$44,000	$29,000	$20,000
Option 1 Approximate Force Main Length (ft)	3,600		
Option 1 Estimated Costs for Master Plan Items	$2,147,000		
Option 2 Approximate Force Main Length (ft)	4,200		
Option 2 Estimated Costs for Master Plan Items	$0		
Pump Station Flow Rate (GPM)	500	350	250
Pump Station TDH (ft)	70 - 90	50 - 70	40 - 50
Current Available Capacity at Galt's WWTP (MGD)	0.7		
Projected Available Capacity at WWTP After Development (MGD)	0.41	0.49	0.56

The City's WWTP is designed to treat 3.0 million gallons per day (MGD) of average dry weather flow (ADWF), but currently operates at 2.3 MGD for ADWF. A plant capacity of about 0.7 MGD is available, which means there is currently enough capacity for all of the proposed project alternatives. The City may consider increasing the capacity of the plant prior to connection of the proposed developments, due to the limited amount of available capacity. Based on the WWTP Master Plan, the City intends to expand the WWTP to have a capacity of 4.5 MGD by 2020, so the time frame of WWTP upgrades may be negotiated in the development of the Utility Services Agreement. Table 5-2 also includes the available capacity of the City's WWTP after the proposed development is built. The costs in Table 5-2 do not necessarily represent the fees paid to the City of Galt; all costs will be negotiated between the two parties.

CONNECTION TO SASD AND SRCSD

The Mall Site has existing infrastructure within and around the property. The site itself has several 8 inch sewer lines. These 8 inch lines converge to a central 8 inch line near Bilby Road and then connect to a 15 inch trunk sewer main on Promenade Parkway. A trunk sewer main is defined as a sewer main that conveys over 1 MGD. The sewer lines transport wastewater to the SRCSD WWTP, which is currently permitted to discharge 181 MGD of average dry weather flow (ADWF) and operates around 141 MGD for ADWF (From NPDES Permit). The plant has an available capacity of about 40 MGD, which means there is currently enough capacity for the proposed alternative.

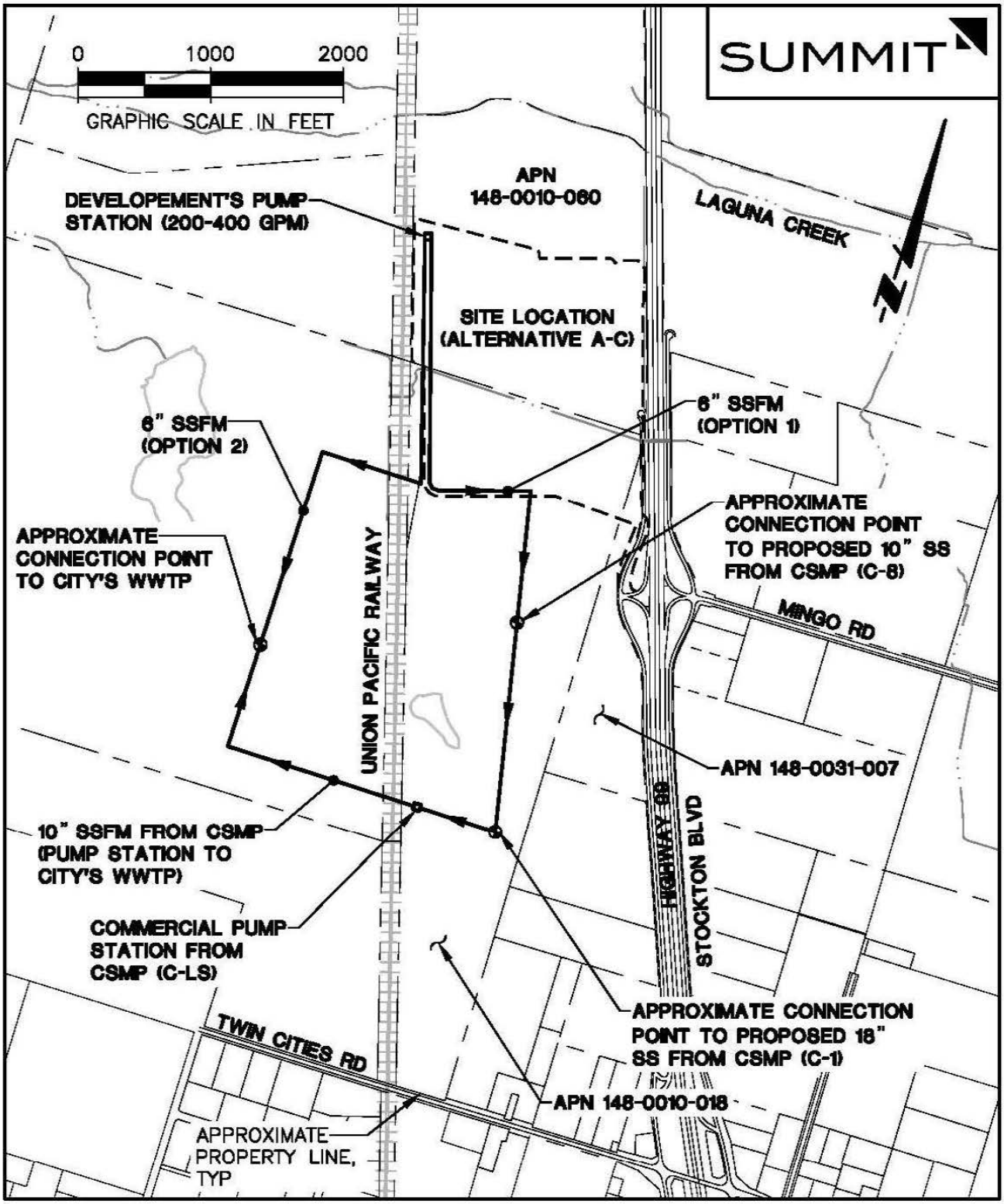
To assess connection feasibility, the 8 inch and 15 inch truck sewer line capacities were compared to the required capacities where possible. The 8 inch sewer lines were originally installed for a mall that was in the process of being constructed. This 8 inch connection will have to be upgraded to a 10 to 12 inch sewer line to handle the projected flows from the casino and hotel. The size of the new sewer will depend on the slope of the pipe line. A proposed sewer connection for this alternative is shown in Appendix A, Site Plans & Water and Wastewater Treatment System Schematics. Table 5-3 describes the estimated connection and monthly fee as well as the approximate length of the 10 inch to 12 inch sewer line. This site has credits for sewer connection, which were deducted for the estimated connection fee.

The 15 inch trunk sewer line on Promenade Parkway will likely have enough available capacity to handle the projected wastewater flows from the site. The available sewer line capacities were not determined due to the lengthy process required for SASD to perform a study. There is insufficient information available publicly for Summit Engineering to perform an independent capacity study. A capacity study will be required before design and construction to confirm if upgrades will be needed. If this trunk sewer line needs to be upgraded, it would need to be constructed by the Tribe and will be eligible for reimbursement by SASD. This will require an agreement with the District. A more detailed description of the reimbursement process for trunk sewer lines is in Section 8.1 of SASD's Sewer Ordinance (See Appendix C, Wastewater Management Requirements).

TABLE 5-3 SASD AND SRCSD CONNECTION INFORMATION

Alternative	F
Sewer Connection Fee	$4,159,000
Monthly Fee	$42,000
Length of 10" to 12" Sewer Connection (ft)	850
Current Available Capacity at SRCSD's WWTP (MGD)	40
Projected Available Capacity at SRCSD's WWTP After Development (MGD)	39.7

FIGURE 5-1. CITY OF GALT SEWER CONNECTION



SECTION 6 – CONCLUSIONS AND RECOMMENDATIONS

WATER

For all project alternatives, a feasible water supply source is available. A summary of the water source options is provided in this section along with recommendations for each project site.

TWIN CITIES SITE (ALTERNATIVES A, B, AND C)

Two water supply options are potentially feasible for the Twin Cities Site: connection to the City of Galt water system and an onsite well water system. The development of an onsite water system would likely provide a more cost effective alternative, but would require more onsite operational oversight and maintenance.

An onsite public water system at the Twin Cities Site includes the following requirements:

- Well drilling and construction (two wells drilled to depths of approximately 300 and 500 feet have been noted in the area)
- Water quality testing to understand actual groundwater quality
- Treatment requirements may include removal of manganese, iron, and arsenic
- Regulatory coordination for well installation, water treatment, and water quality monitoring
- Periodic water quality testing

A city water system connection includes the following requirements:

- Development of a water distribution system analysis, evaluating existing water treatment, storage, and distribution system capacities and needs
- Development of a utility service agreement with the City of Galt, including payment of connection fees and monthly usage fees with a 25 percent surcharge for facilities located outside of the City of Galt
- Financing to the City of Galt for the design and construction of a new well and a new water treatment, storage, and distribution system, as needed (Detailed in Section 4 – Water Supply Assessment and in Appendix F).

HISTORIC RANCHERIA SITE (ALTERNATIVES D AND E)

The Historic Rancheria Site is located far from centralized water systems. Groundwater from onsite wells should be used to supply water to the site since municipal water system connection is unavailable. An onsite public water system at the Historic Rancheria Site includes the following requirements:

- Well drilling and construction (a well drilled to a depth of approximately 200 feet has been noted in the area)
- Water quality testing to understand actual groundwater quality
- Treatment requirements may be minimal based on water quality in a nearby well
- Regulatory coordination for well installation, water treatment, and water quality monitoring
- Periodic water quality testing

MALL SITE (ALTERNATIVE F)

The Mall Site contains a SCWA water distribution system constructed for the previously planned development. Because the water system infrastructure has been installed, an onsite water system is not recommended at

this time. The installed water system has not been finalized and will require the following steps to begin water system operation:

- Evaluation of the water system utility capacity installed at the site (upgrades on site are needed if additional capacity is required)
- Submission of internal water system improvement plans to SCWA
- Payment of the difference in impact and acreage fees (the existing system is credited with the fees previously paid)
- Payment of additional fees should additional water meters of water lines be needed
- Payment of monthly user fees

WASTEWATER

For all project alternatives, a feasible wastewater management strategy is available. A summary of the wastewater management approaches are provided in this section along with recommendations for each project site.

TWIN CITIES SITE (ALTERNATIVES A, B, & C)

Two water supply options are potentially feasible for the Twin Cities Site: connection to the City of Galt sewer system and an onsite wastewater treatment system.

The advantages of offsite treatment and disposal include reduced liability, less permitting requirements, and less O & M costs. There is currently no infrastructure to convey the proposed development's wastewater to the City of Galt's WWTP. Offsite disposal to the City of Galt's WWTP would require the following steps:

- Development of a utility service agreement with the City of Galt, including payment of connection fees and monthly usage fees with a 25 percent surcharge for facilities located outside of the City of Galt.
- Construction of a pump station and new sewer lines as described in Section 5
    - Option 1:Connect to the City's WWTP directly through a long force main
    - Option 2: Connect to a proposed sewer main consistent with the City of Galt CSMP

Advantages of onsite treatment and disposal include groundwater recharge, reduced potable water demands due to recycled water use, and more control over the development operations. Due to the size of the site, onsite wastewater treatment and disposal are feasible. The following recommendations apply for the wastewater treatment and disposal system at the Twin Cities Site:

- Treat wastewater to California Title 22 tertiary recycled water standards
- Use tertiary recycled water for landscape irrigation and toilet flushing, thus reducing potable water usage and the minimizing the size of the disposal area
- Utilize both surface spray and subsurface drip disposal to reduce costs
- Utilize the water uptake from the plants within the disposal areas

HISTORIC RANCHERIA SITE (ALTERNATIVES D & E)

The Historic Rancheria Site option does not have a feasible option to send the wastewater to a municipal sewer system and hence will require an onsite wastewater treatment. Due to the limited disposal area, the following recommendations apply for the wastewater treatment and disposal system at the Historic Rancheria Site:

- Treat wastewater to California Title 22 tertiary recycled water standards
- Use tertiary recycled water for landscape irrigation and toilet flushing, thus reducing potable water usage and the minimizing the size of the disposal area
- Discharge treated effluent to the Cosumnes River through an approved NPDES discharge permit
- Utilize surface spray disposal as much as possible during the summer to reduce the amount of wastewater discharged to the river

MALL SITE (ALTERNATIVE F)

Offsite disposal to SRCSD is a feasible option since there is an existing connection to the SRCSD system. As previously noted, the advantages of offsite treatment and disposal include reduced wastewater management needs, reduced permitting requirements, and lower O & M costs.

Since there may not be sufficient sewer capacity to convey the proposed development's wastewater, the following steps would be required to utilize the SRCSD connection:

- The Tribe could finance an upgraded sewer line connecting the Casino to the trunk sewer main (on Promenade Parkway).
- Any upgrades needed for the trunk sewer line would be paid for by the Tribe, and reimbursed by SASD.
- Connection and monthly fees would be paid by the Tribe (the existing system is credited with the fees previously paid)

ACRONYMS AND ABBREVIATIONS

ADD – Average Day Demand
ADWF – Average Dry Weather Flow
AEG – Applied Engineering and Geology, Inc.
BOD – Biochemical Oxygen Demand
CCF- 100 cubic feet of water
CO_2 – Carbon Dioxide
CRIA – Cosumnes River Indian Association
CSMP – Collection System Master Plan
DWR – Department of Water Resources
FOG – Fats, Oils, and Greases
gal – Gallon
GPD – Gallons Per Day
GPM – Gallons Per Day
in/day – inches per day
MBR – Membrane Bioreactor
MDD – Maximum Daily Demand
mg/L – Milligrams per Liter
MGD- Million Gallons Per Day
NH_3 – Ammonia
NO_3 – Nitrate
NPDES – National Pollutant Discharge Elimination System
SASD- Sacramento Area Sewer District
SCEH – Sacramento County Environmental Health

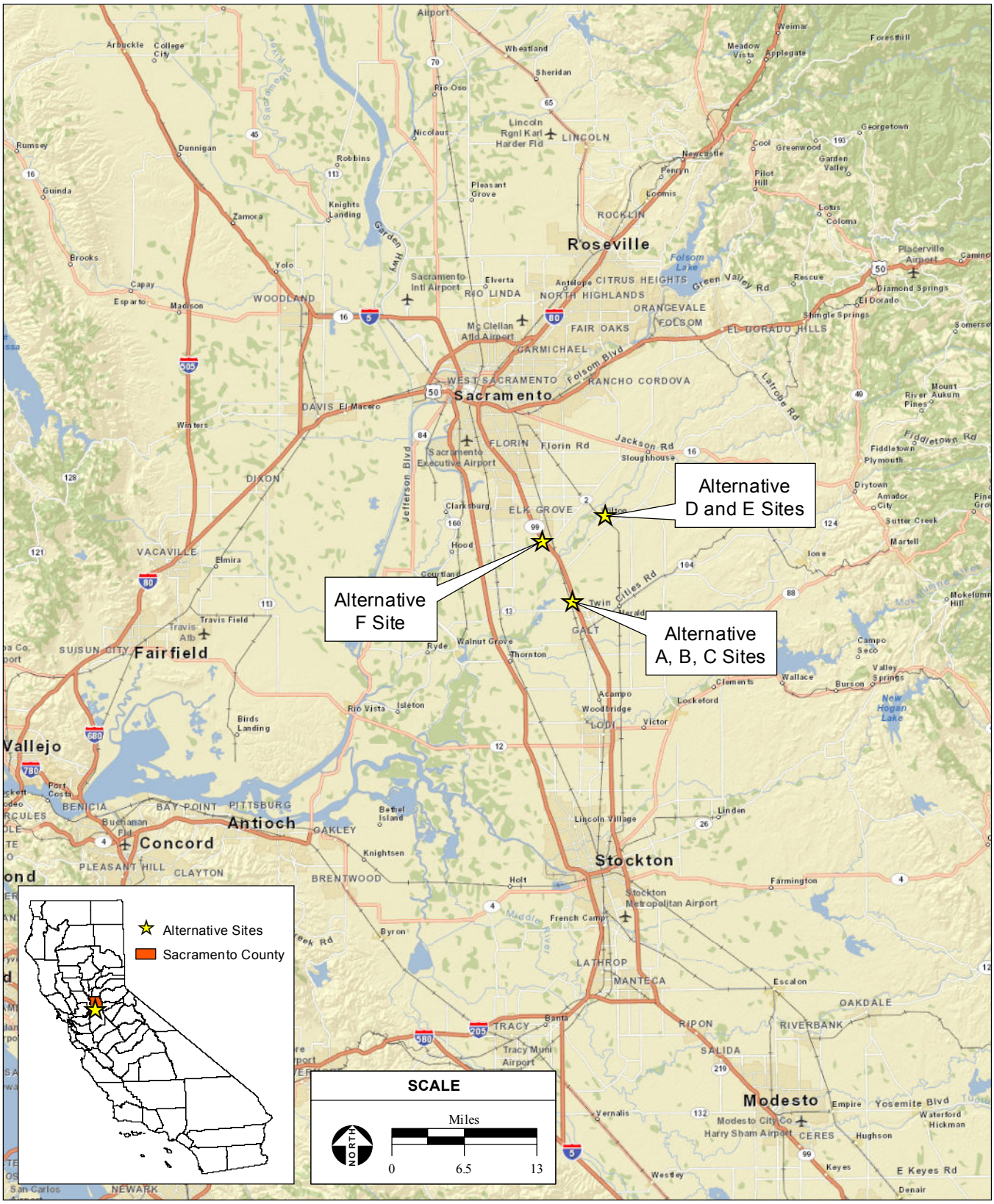
SCWA – Sacramento County Water Agency
SRCSD- Sacramento Regional County Sanitation District
TDH – Total Dynamic Head
TSS – Total Suspended Solids
UIC-Underground Injection Control
USDA – United States Department of Agriculture
USEPA – United States Environmental Protection Agency
WDSMP – Water Distribution System Master Plan
WWTP – Wastewater Treatment Plant

REFERENCES

1. Brown and Caldwell. 2010 Zone 41 Urban Water Management Plan. July 2011. Prepared for Sacramento County Water Agency.
2. Carollo Engineers. 2010 Urban Water Management Plan. February 2013. Prepared for the City of Galt
3. Carollo Engineers. City of Galt Water Distribution System Master Plan. May 2010. Prepared for the City of Galt
4. Carollo Engineers. City of Galt Wastewater Collection System Master Plan. May 2010. Prepared for the City of Galt.
5. City of Galt. City of Galt Municipal Service Review. November 2009. Prepared for the Sacramento Local Agency Formation Commission.
6. MWH Global. Zone 40 Water Supply Master Plan. February 2005. Prepared for Sacramento County Water Agency.
7. West Yost Associates. City of Galt Wastewater Treatment Plant Facilities Master Plan. July 2013. Prepared for the City of Galt.

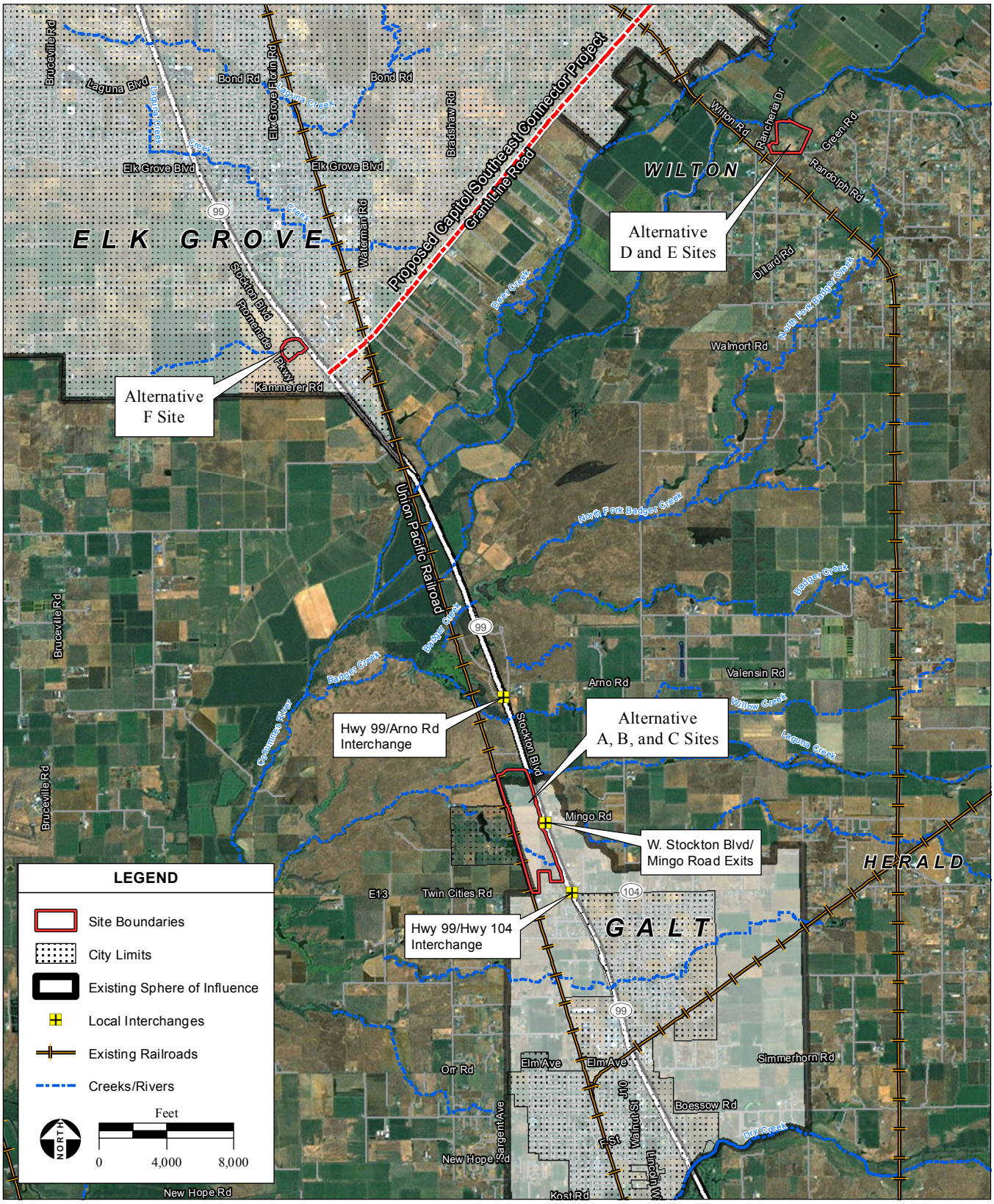
APPENDIX A: SITE PLANS & WATER AND WASTEWATER TREATMENT SYSTEM SCHEMATICS

ALTERNATIVE A THROUGH F SITE PLANS
CITY OF GALT WDSMP PROPOSED CAPITAL IMPROVEMENT SITE PLAN
CITY OF GALT CSMP PROPOSED CAPITAL IMPROVEMENT SITE PLAN
TWIN CITIES SITE WATER TREATMENT SYSTEM SCHEMATIC
HISTORIC RANCHERIA WATER TREATMENT SYSTEM SCHEMATIC
WASTEWATER SYSTEM SCHEMATIC



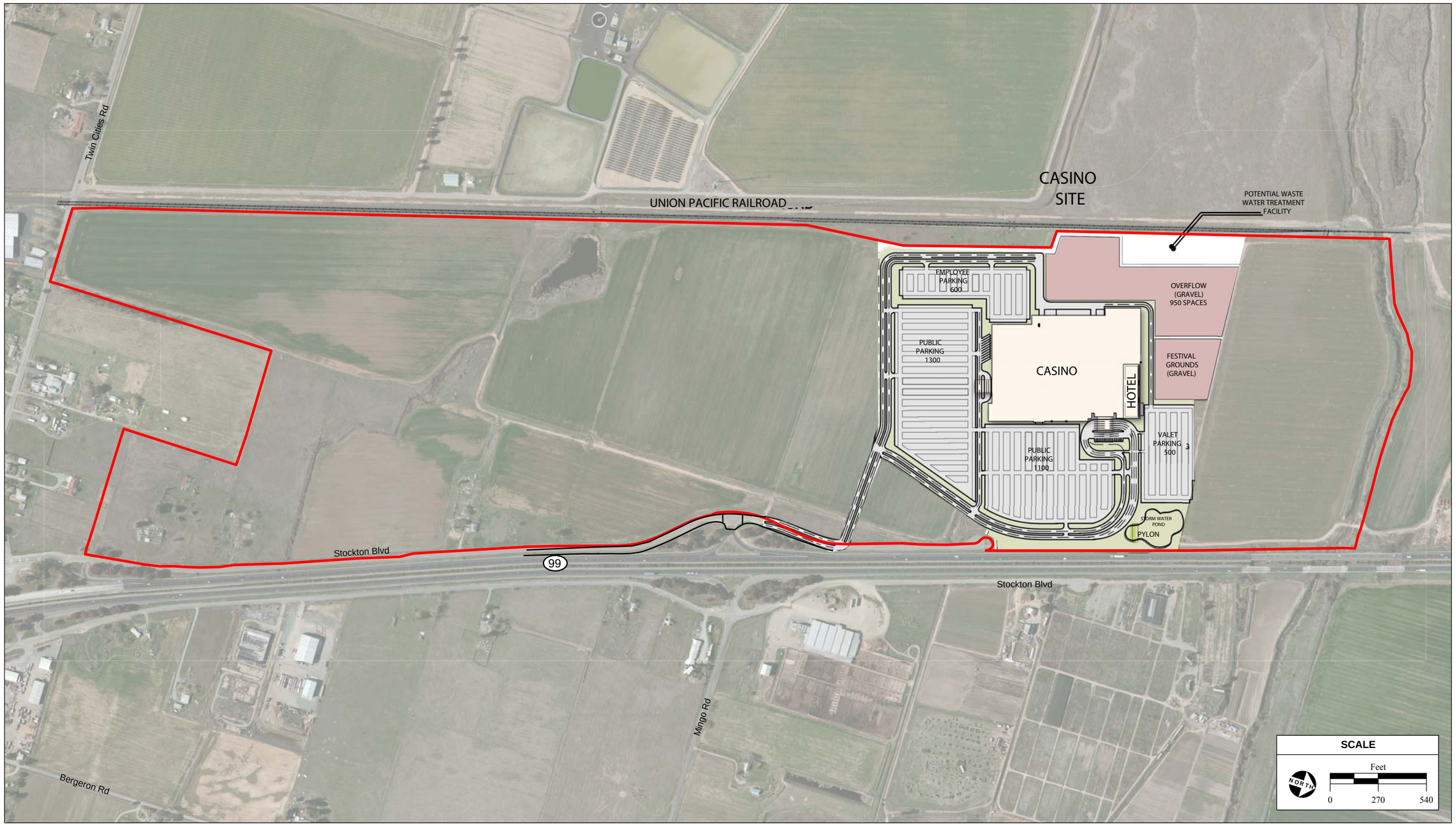
SOURCE: ESRI Data, 2014; AES, 2014

Figure 1
Regional Location



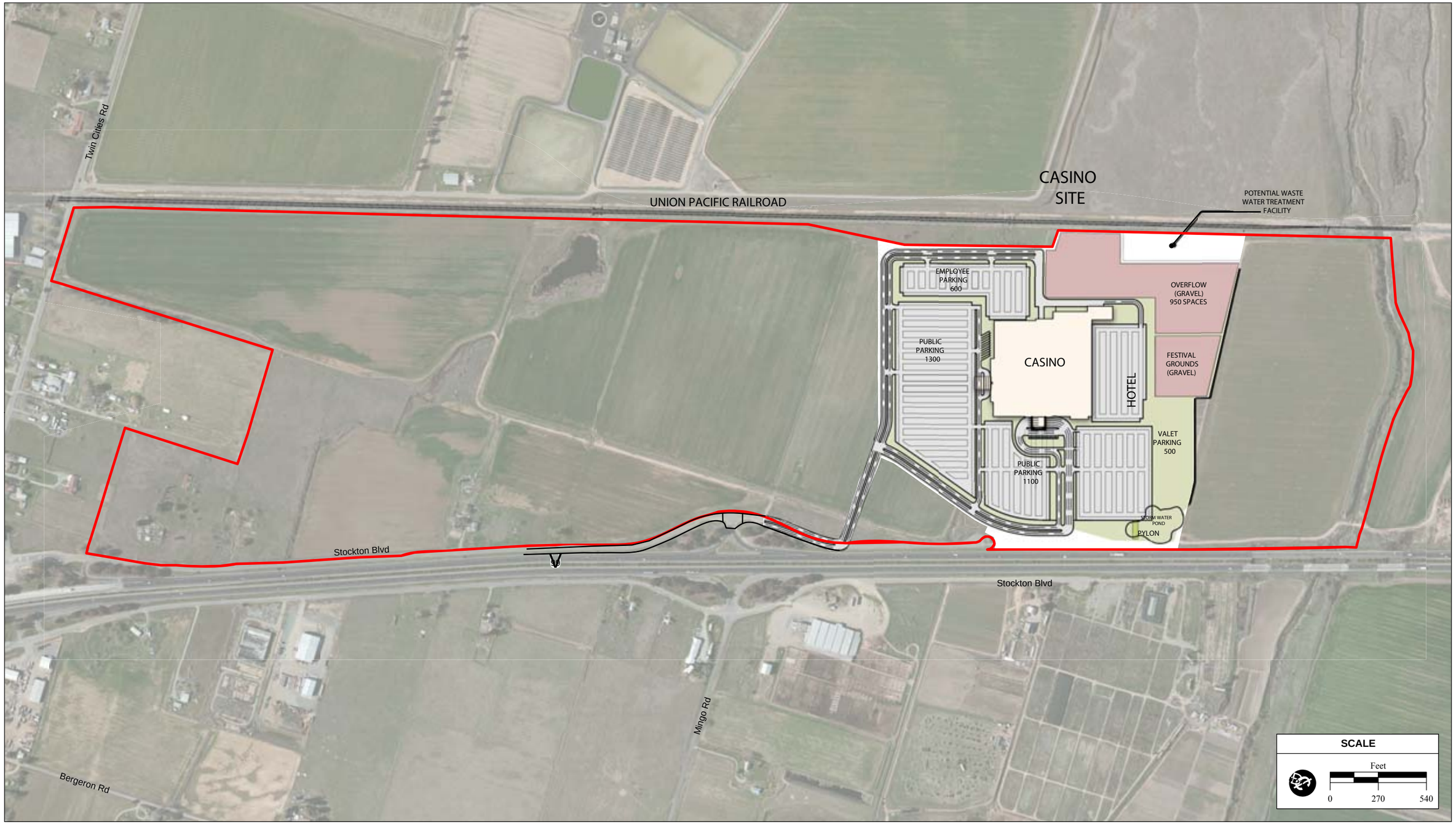
SOURCE: Microsoft aerial photograph, 2/2/2012; ESRI Data; AES, 2014

Figure 2
Project Alternative Sites



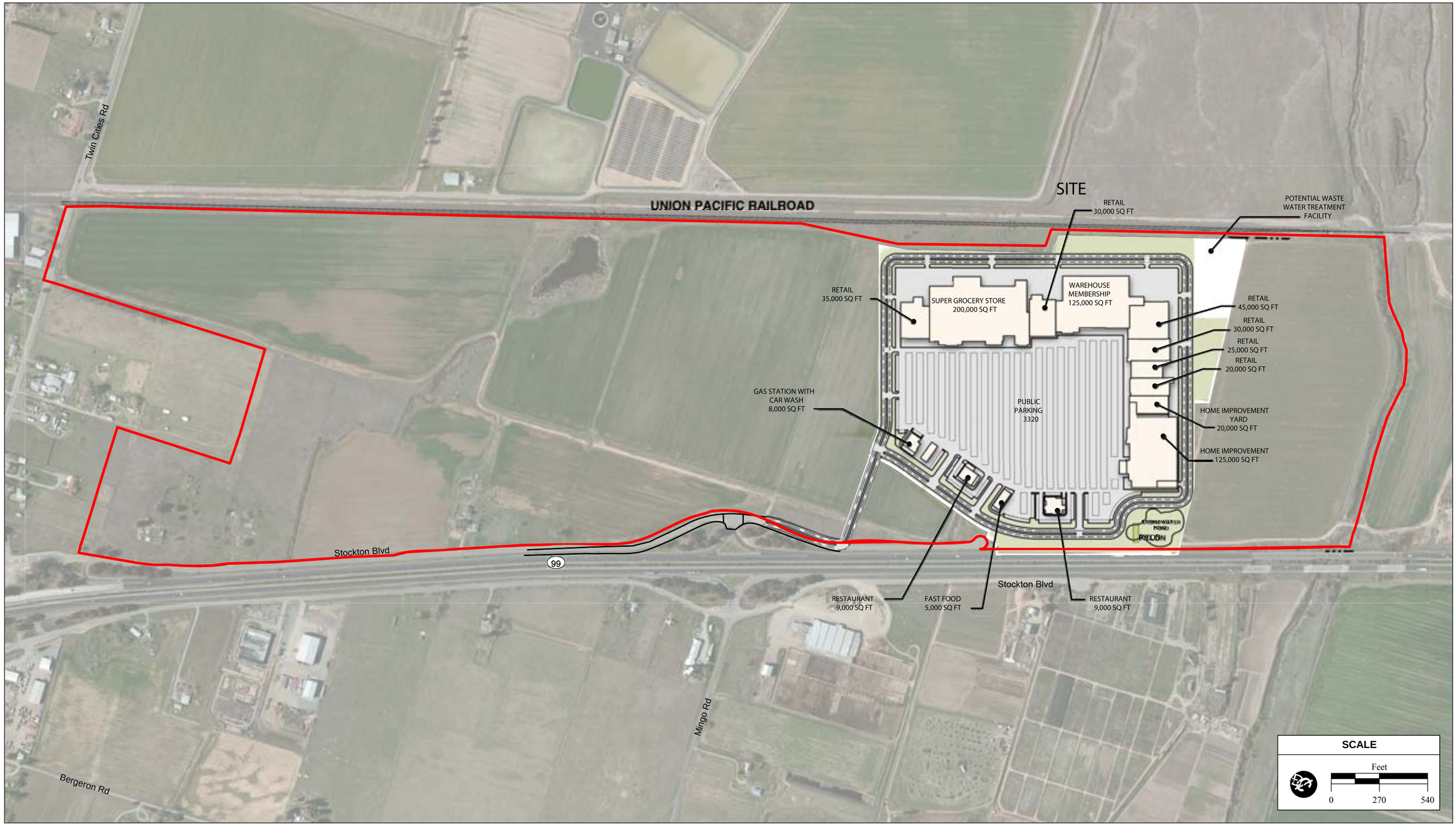
SOURCE: Klai Juba Architects, 1/10/2014; Microsoft aerial photograph, 2/2/2012; AES, 2014

Figure 3
Alternative A – Proposed Action



SOURCE: Klai Juba Architects, 1/10/2014; Microsoft aerial photograph, 2/2/2012; AES, 2014

Figure 4
Alternative B – Reduced Intensity Casino



SOURCE: Klai Juba Architects, 1/10/2014; Microsoft aerial photograph, 2/2/2012; AES, 2014

Figure 5
Alternative C - Retail on Twin Cities Site

SOURCE: Klai Juba Architects, 1/10/2014; Microsoft aerial photograph, 2/2/2012; AES, 2014

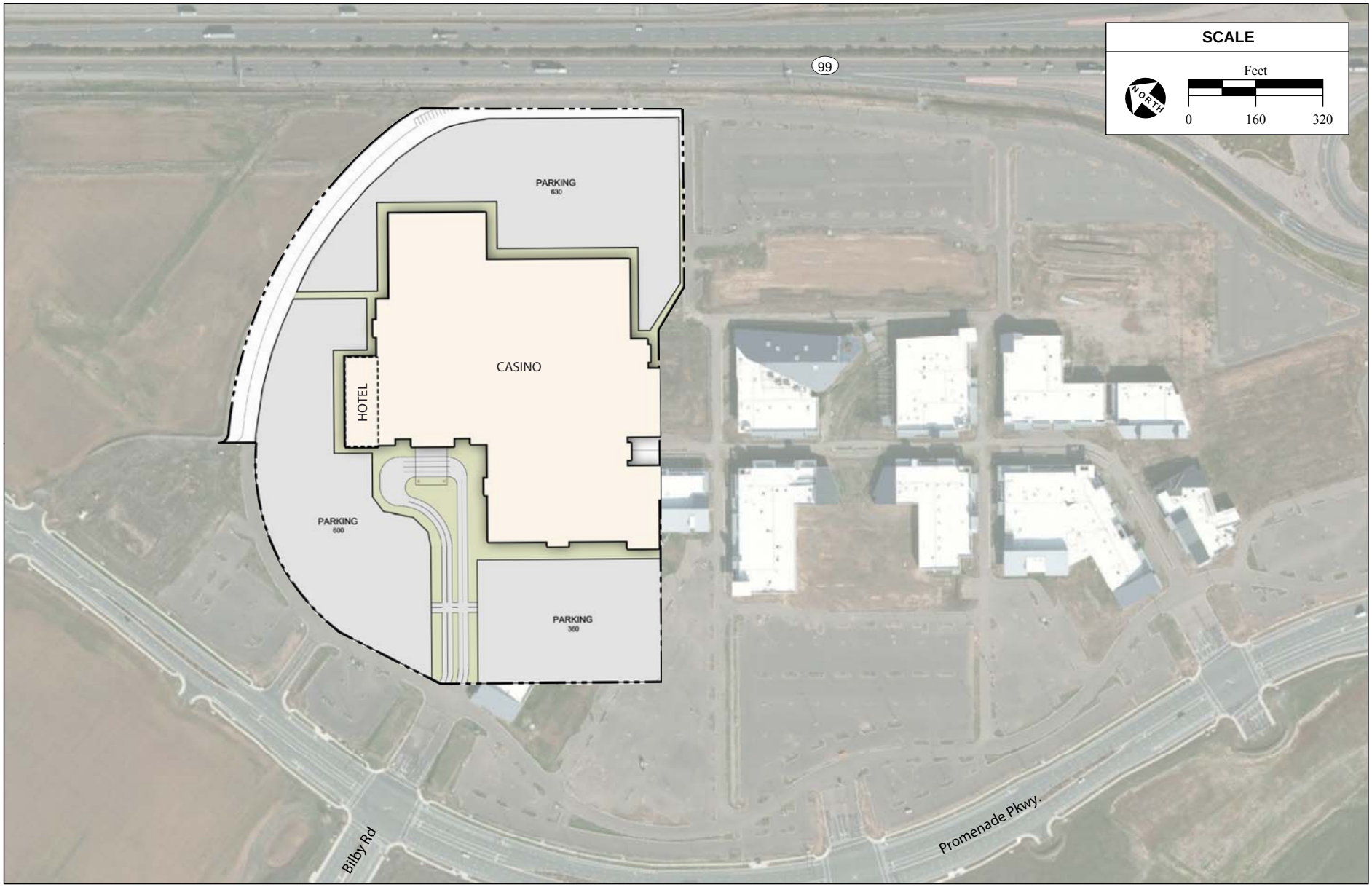
Figure 6

Alternative D – Casino at Rancheria Site

SOURCE: Klai Juba Architects, 1/10/2014; Microsoft aerial photograph, 2/2/2012; AES, 2014

Figure 7

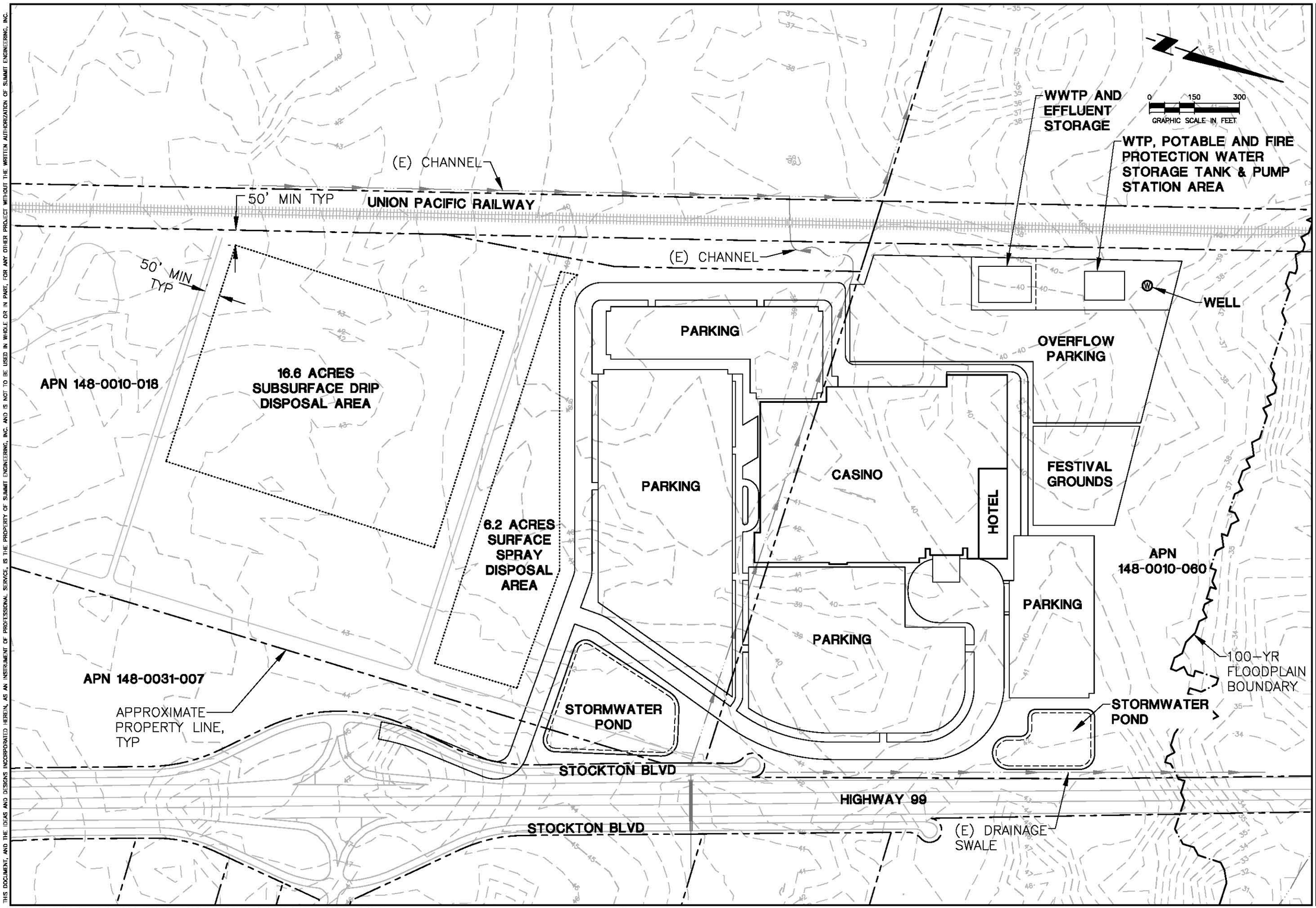
Alternative E – Reduced Intensity Casino at Rancheria Site



SOURCE: Klai Juba Architects, 1/17/2014; AES, 2014

Figure 8

Alternative F – Casino at Mall Site



SUMMIT
Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

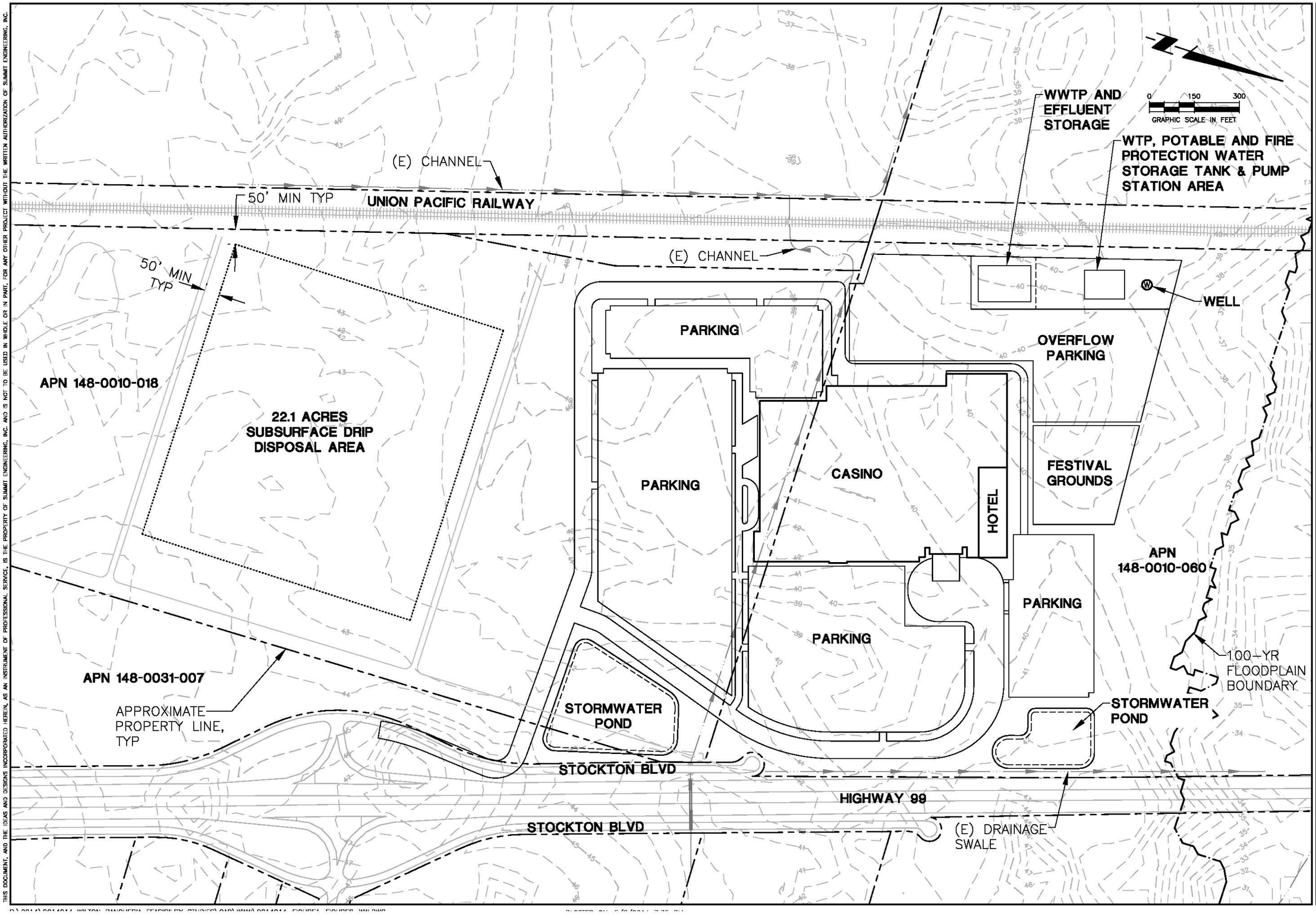
WILTON RANCHERIA

TWIN CITIES SITE

ALERNATIVE A, SURFACE SPRAY AND SUBSURFACE DRIP DISPOSAL

	2014-05-08 DRAFT TO CLIENT
DATE:	2014-03-03
JOB NO:	2014014
SCALE:	AS SHOWN
DRAWN:	TAF
CHECKED:	GC

SHEET
FIGURE 1



SUMMIT
Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

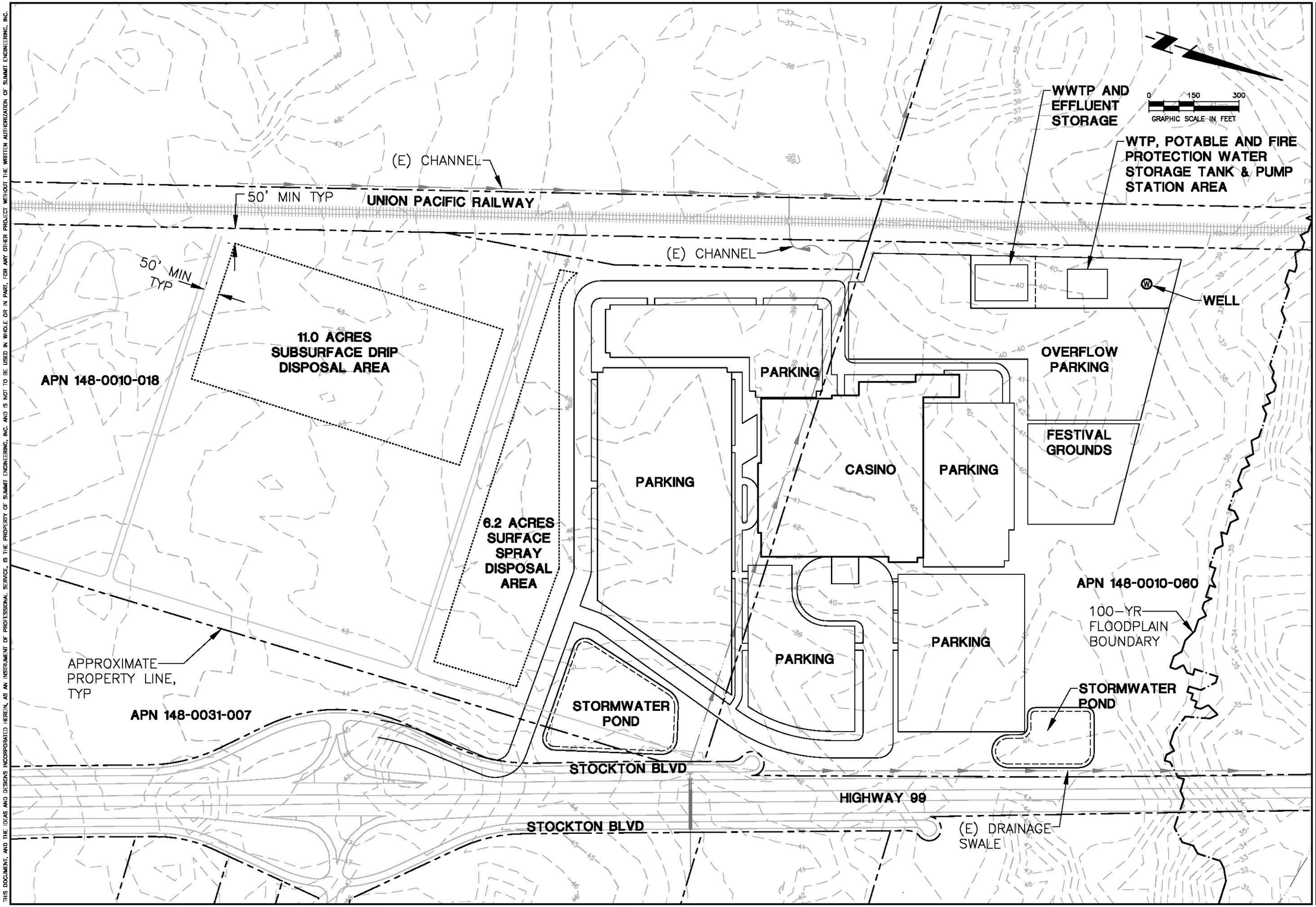
WILTON RANCHERIA

TWIN CITIES SITE

ALERNATIVE A, SUBSURFACE DRIP DISPOSAL ONLY

	2014-05-08 DRAFT TO CLIENT
DATE:	2014-03-03
JOB NO:	2014014
SCALE:	AS SHOWN
DRAWN:	TAF
CHECKED:	GC

SHEET
FIGURE 2



SUMMIT
Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

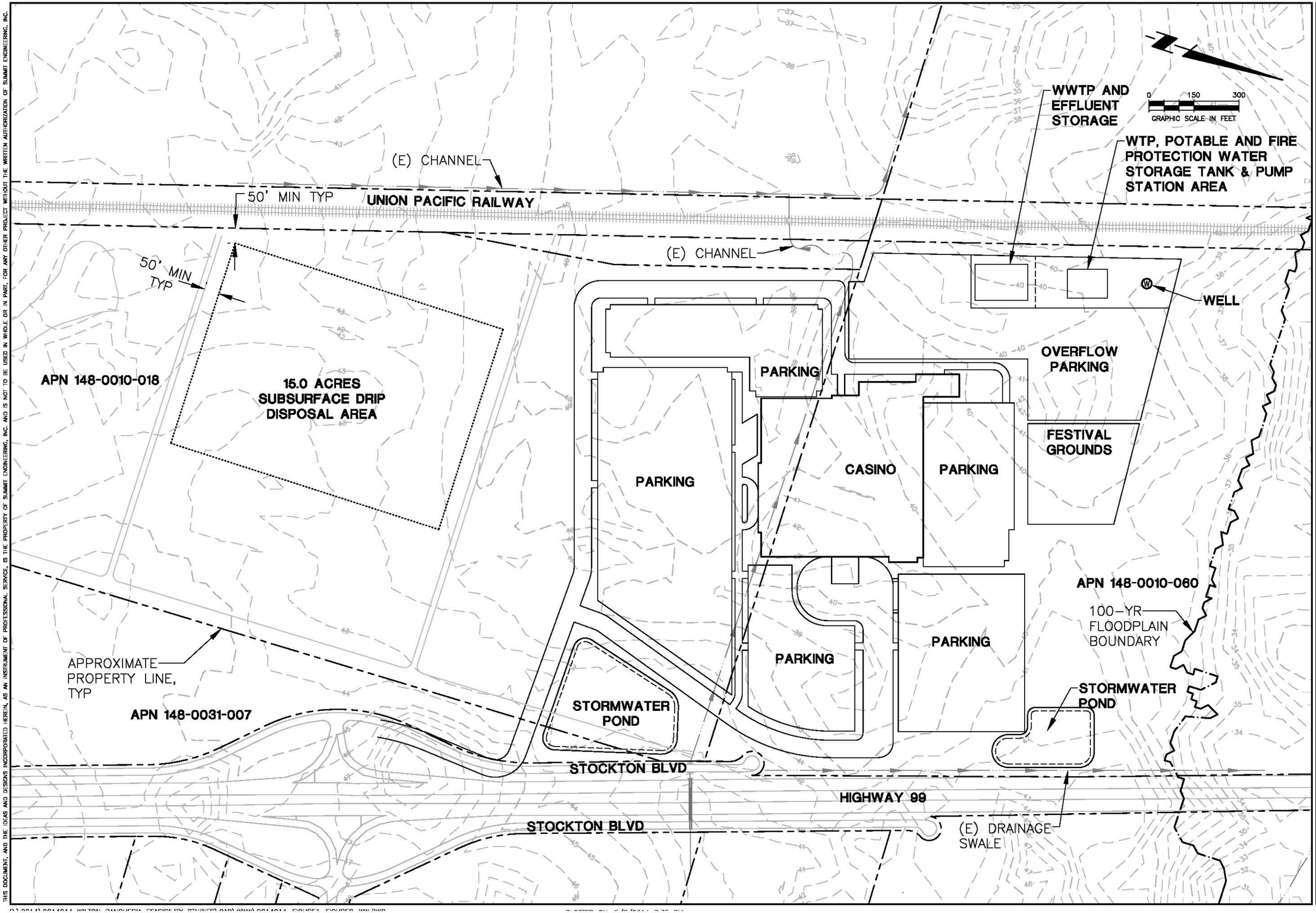
WILTON RANCHERIA

TWIN CITIES SITE

ALTERNATIVE B, SURFACE SPRAY AND SUBSURFACE DRIP DISPOSAL

	2014-05-08 DRAFT TO CLIENT
DATE:	2014-03-03
JOB NO:	2014014
SCALE:	AS SHOWN
DRAWN:	TAF
CHECKED:	GC

SHEET
FIGURE 3



SUMMIT
Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

WILTON RANCHERIA

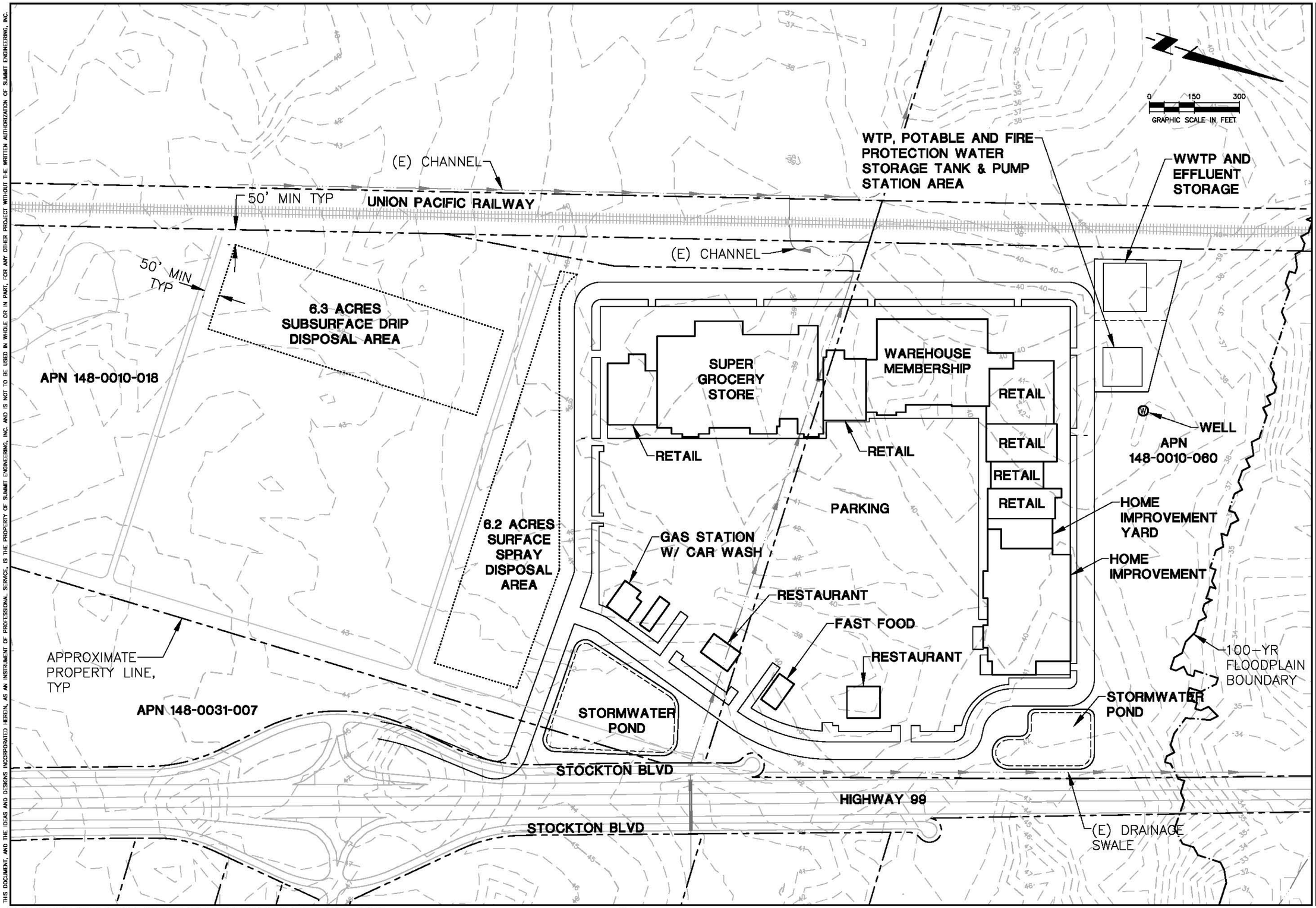
TWIN CITIES SITE

ALTERNATIVE B, SUBSURFACE DRIP DISPOSAL ONLY

	2014-05-08 DRAFT TO CLIENT

DATE:	2014-03-03
JOB NO:	2014014
SCALE:	AS SHOWN
DRAWN:	TAF
CHECKED:	GC

SHEET
FIGURE 4



SUMMIT
Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

WILTON RANCHERIA

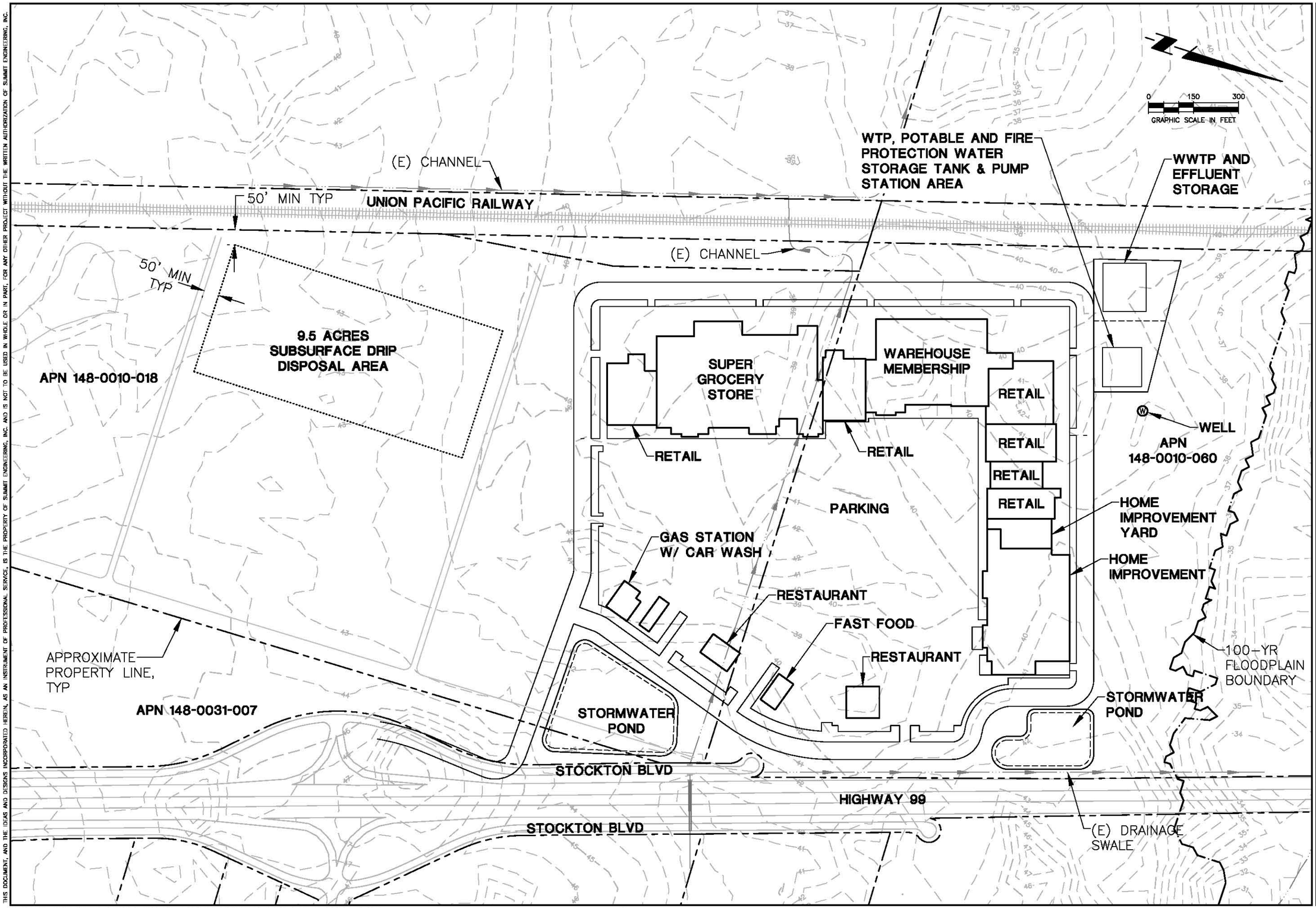
TWIN CITIES SITE

ALTERNATIVE C, SURFACE SPRAY AND SUBSURFACE DRIP DISPOSAL

2014-05-08	DRAFT TO CLIENT

DATE:	2014-03-03
JOB NO:	2014014
SCALE:	AS SHOWN
DRAWN:	TAF
CHECKED:	GC

SHEET
FIGURE 5



SUMMIT
Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

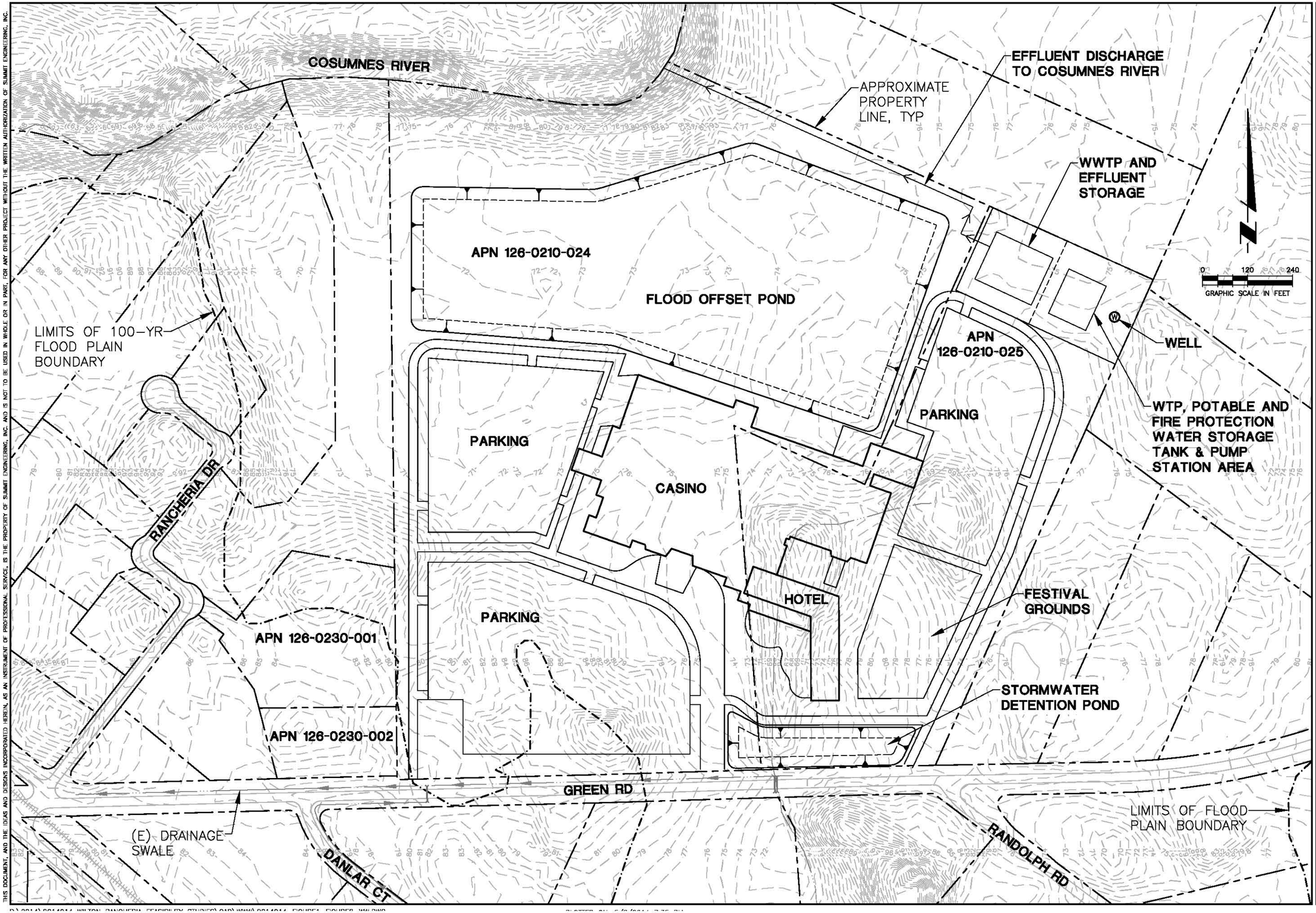
WILTON RANCHERIA

TWIN CITIES SITE

ALTERNATIVE C, SUBSURFACE DRIP DISPOSAL ONLY

	2014-05-08 DRAFT TO CLIENT
DATE:	2014-03-03
JOB NO:	2014014
SCALE:	AS SHOWN
DRAWN:	TAF
CHECKED:	CC

SHEET
FIGURE 6



SUMMIT
Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

WILTON RANCHERIA

RANCHERIA SITE

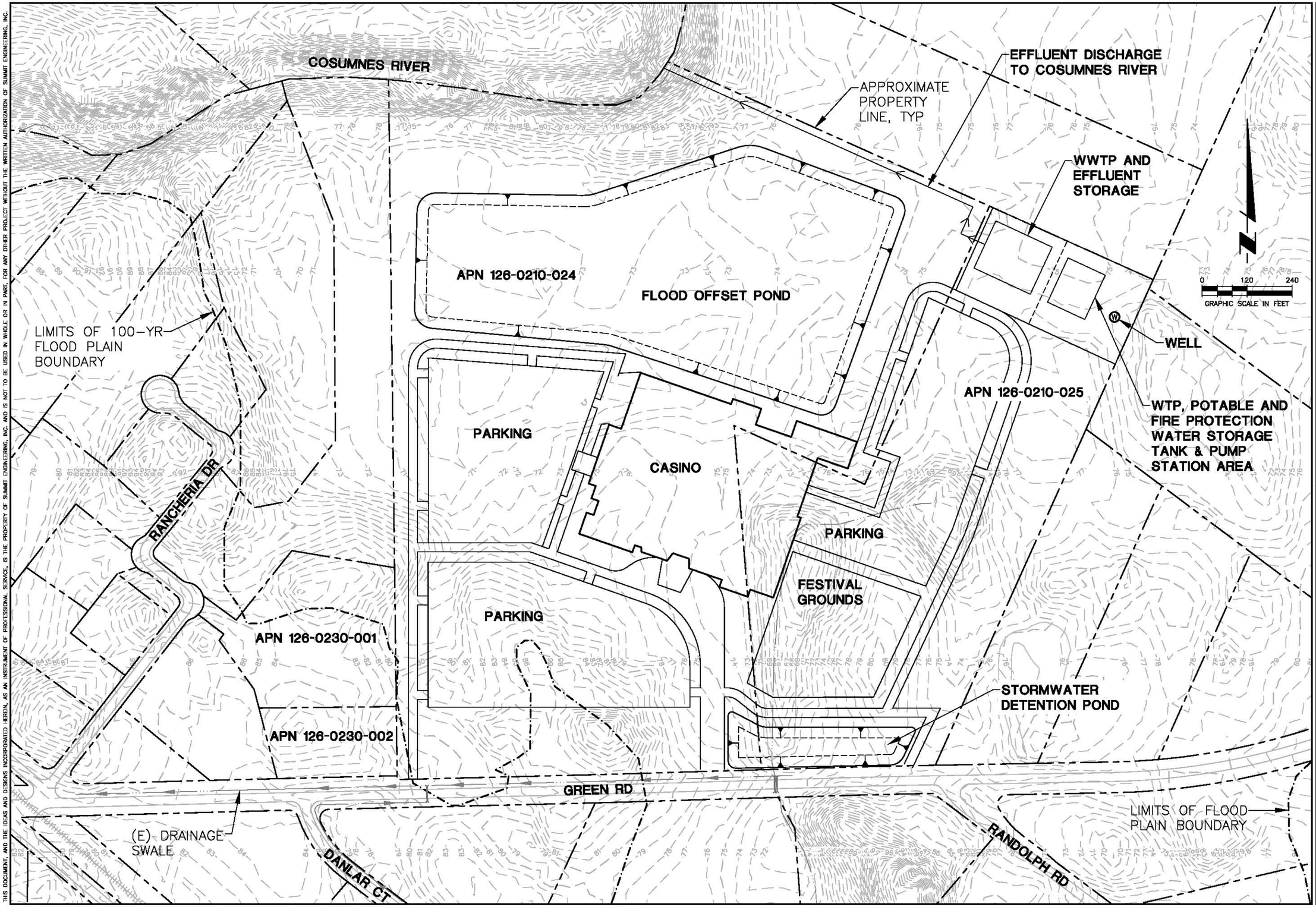
ALTERNATIVE D, SURFACE WATER DISPOSAL

	2014-05-08 DRAFT TO CLIENT

DATE:	2014-03-03
JOB NO:	2014014
SCALE:	AS SHOWN
DRAWN:	TAF
CHECKED:	GG

SHEET

FIGURE 7



SUMMIT
Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

WILTON RANCHERIA

RANCHERIA SITE

ALTERNATIVE E, SURFACE WATER DISPOSAL

	2014-05-08 DRAFT TO CLIENT
DATE:	2014-03-03
JOB NO:	2014014
SCALE:	AS SHOWN
DRAWN:	TAF
CHECKED:	GG

SHEET

FIGURE 8

HIGHWAY 99

APPROXIMATE PROPERTY LINE, TYP

PARKING

CASINO

HOTEL

PARKING

10"-12" SS

PARKING

(E) PARKING

EXISTING BUILDING, TYP

(E) PARKING

KAMMERER RD

(E) PARKING

(E) PARKING

APN 134-1010-001

(E) PARKING

(E) PARKING

(E) CONNECTION TO SWCA WATER DISTRIBUTION MAIN

(E) 18" SD

(E) 42" SD

(E) 24" W TRANSMISSION MAIN

(E) 15" SS

(E) 48" SD

(E) 48" SD

(E) CONNECTION TO SWCA WATER DISTRIBUTION MAIN

CONNECT TO (E) MANHOLE & 15" TRUNK SEWER LINE

SS MANHOLE

(E) 24" SWCA WATER TRANSMISSION MAIN

(E) 78" SD

BILBY RD

(E) 12" W DISTRIBUTION MAIN

(E) 66" SD

(E) 24" W TRANSMISSION MAIN

(E) 30" SD

(E) 12" W DISTRIBUTION MAIN

(E) CONNECTION TO SWCA WATER DISTRIBUTION MAIN

LENT RANCH PKWY

PROMENADE PKWY

(E) CONNECTION TO SWCA WATER DISTRIBUTION MAIN

(E) 24" SD

(E) 12" W DISTRIBUTION MAIN

(E) 24" W TRANSMISSION MAIN

(E) 48" SD

(E) 12" SS

0 120 240

GRAPHIC SCALE IN FEET

NOTE:

THE CONNECTION PLAN IS PRELIMINARY AND FOR PLANNING PURPOSES ONLY

SUMMIT
Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

WILTON RANCHERIA

MALL SITE

ALTERNATIVE F UTILITY PLAN FOR SERVICE CONNECTIONS

2014-04-07	FOR CLIENT REVIEW

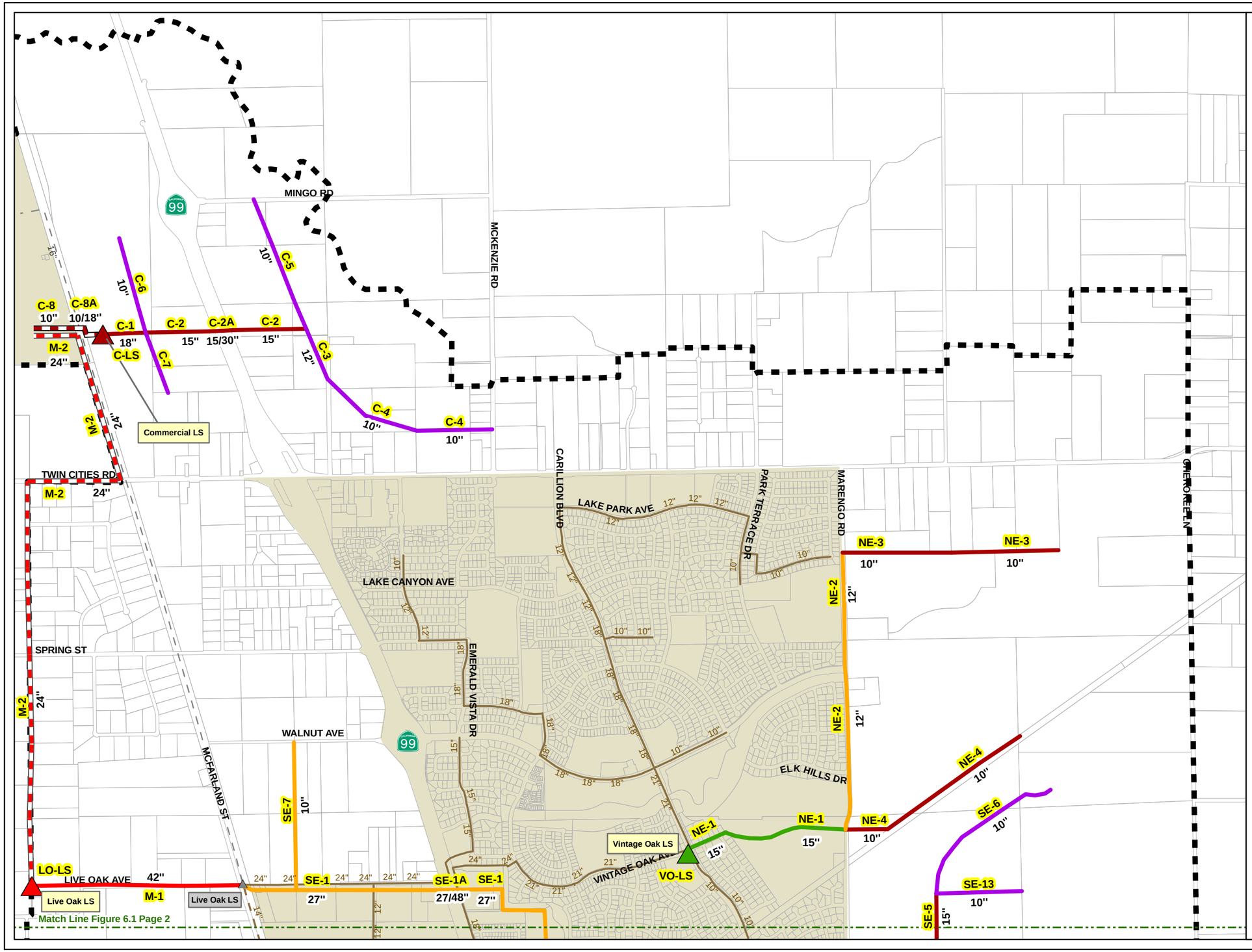
DATE:	2014-04-07
JOB NO:	2014014
SCALE:	AS SHOWN
DRAWN:	TAF
CHECKED:	TCS

SHEET

FIGURE 1

P:\2014\2014014 WILTON RANCHERIA FEASIBILITY STUDIES\CAD\WWW\14014-WWW ALT F SERVICE CONNECTIONS.DWG

PLOTTED ON: 5/9/2014 4:01 PM



Legend

Modeled Wastewater Collection System

- Lift Station
- Abandoned Lift Station
- Pipelines
- Abandoned Pipelines

Existing System Improvements

Phase 1 (2009 - 2015)

- Lift Station

Pipelines

Phase 1 (2009 - 2015)

- New Pipeline
- Pipeline to be Replaced

Future System Improvements

Lift Station

- Phase 1 (2009 - 2015)
- Phase 3 (2021 - 2025)

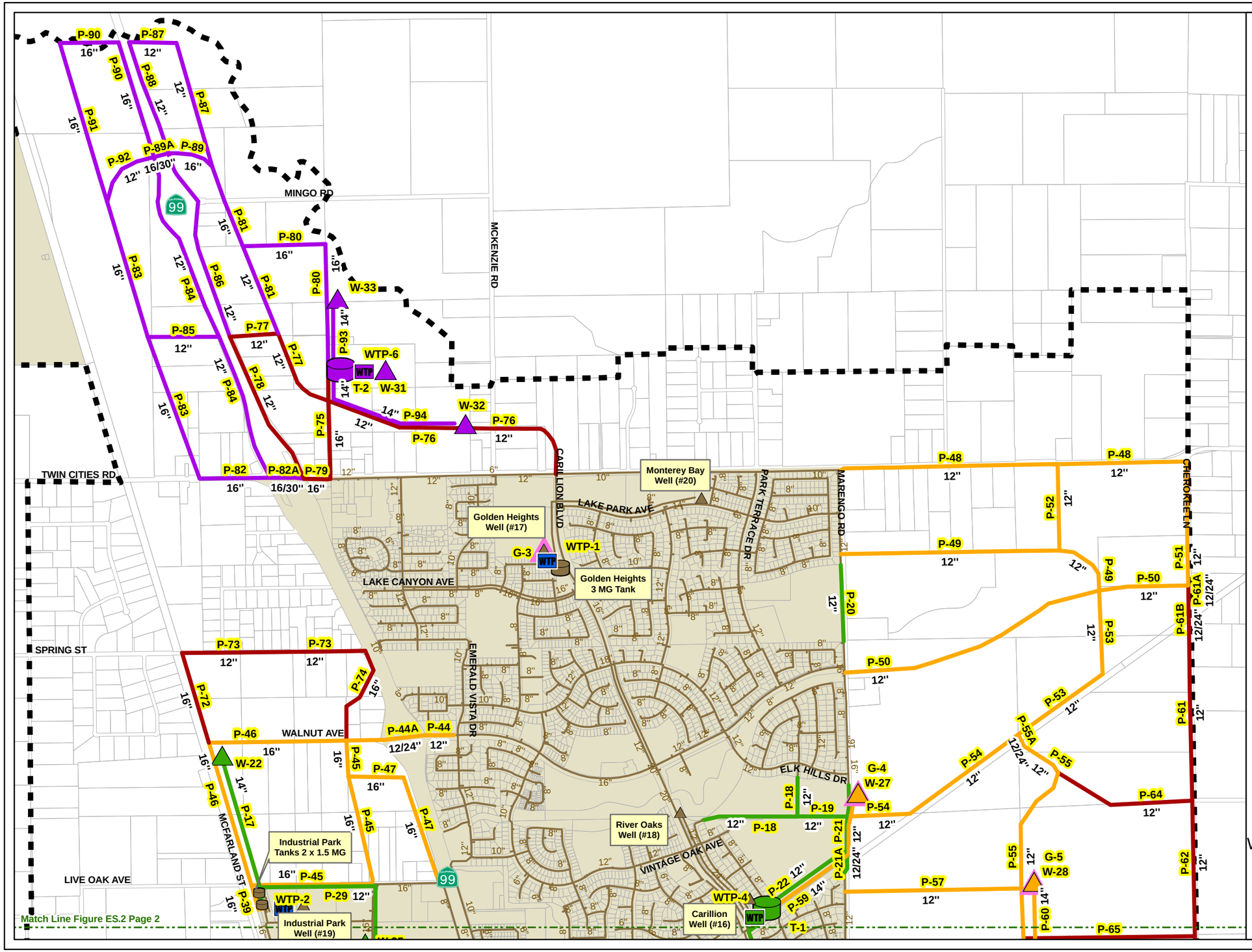
Pipelines

- Phase 1 (2009 - 2015)
- Phase 2 (2016 - 2020)
- Phase 3 (2021 - 2025)
- Phase 4 (2026 - 2030)
- General Plan Boundary
- Parcels
- City Limits
- P-25 Figure Number
- 12" Proposed Pipeline Diameter
- 12/24" Proposed Pipeline/ Casing Pipe Diameter
- 8" Existing Pipeline Diameter

N

0 1,500 3,000 Feet

Figure 6.1
Proposed Capital Improvements (1 of 2)
Wastewater Collection System Master Plan
City of Galt



Legend

Existing Water Distribution System
- Groundwater Well
- Storage Tank
- WTP
- Pipelines

Existing System Improvements

Phase 1 (2009 - 2015)
- Groundwater Well
- New WTP
- WTP Upgrade
- New Pipeline
- Pipeline to be Replaced

Future System Improvements

Groundwater Well
- Phase 1 (2009 - 2015)
- Phase 2 (2016 - 2020)
- Phase 3 (2021 - 2025)
- Phase 4 (2026 - 2030)
- Backup Power at Wells

Storage Tank and Booster Station
- Phase 1 (2009 - 2015)
- Phase 4 (2026 - 2030)

WTP
- Phase 1 (2009 - 2015)
- Phase 2 (2016 - 2020)
- Phase 4 (2026 - 2030)

Pipelines
- Phase 1 (2009 - 2015)
- Phase 2 (2016 - 2020)
- Phase 3 (2021 - 2025)
- Phase 4 (2026 - 2030)
- Parcels
- City Limits
- General Plan Boundary
- P-25 Figure Number
- 12" Proposed Pipeline Diameter
- 12/24" Proposed Pipeline/ Casing Pipe Diameter
- 8" Existing Pipeline Diameter

N

0 1,500 3,000 Feet

Figure ES.2
Proposed Capital Improvements (1 of 2)
Water Distribution System Master Plan
City of Galt

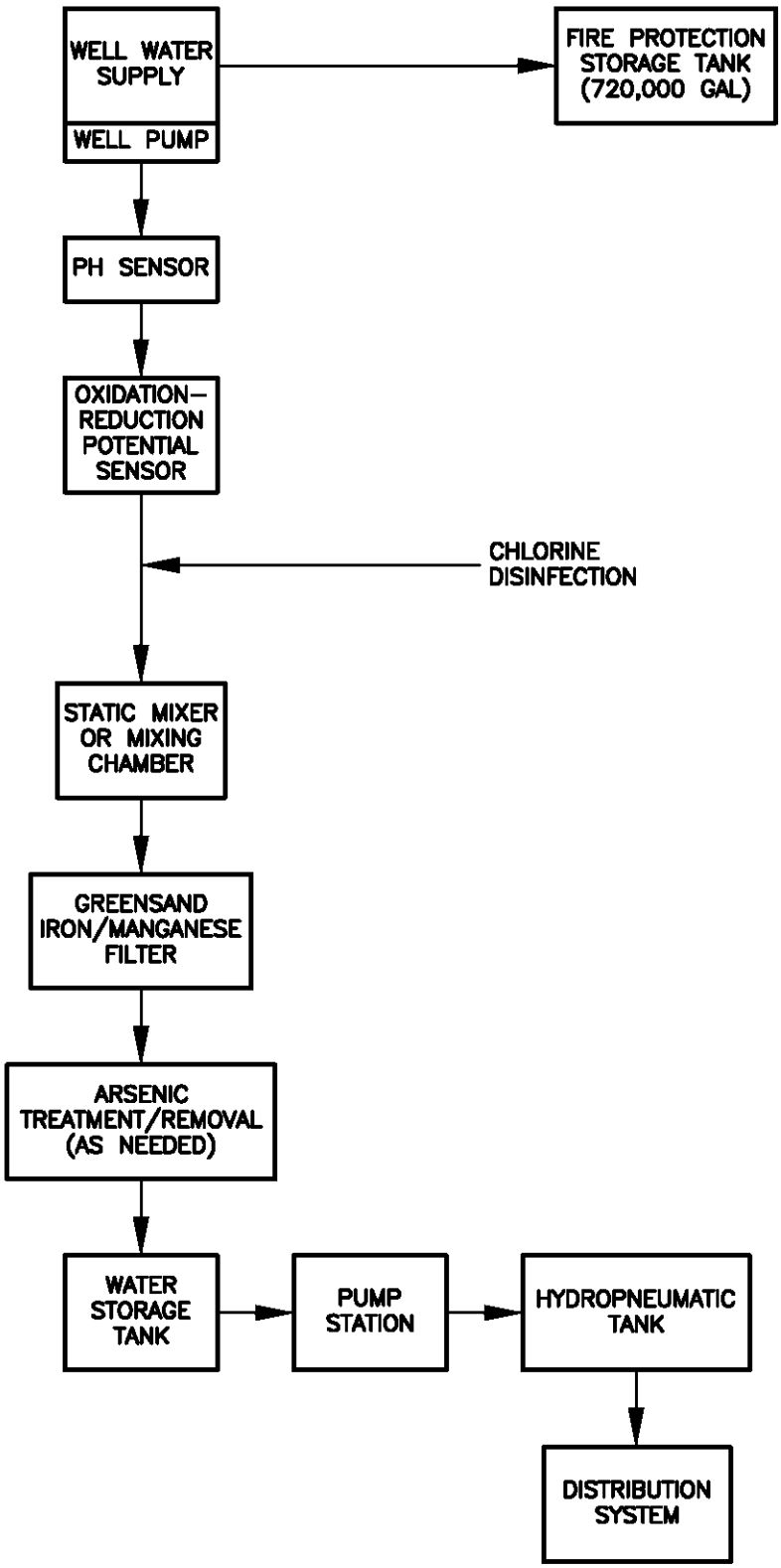
carollo

SUMMIT

WILTON RANCHERIA

TWIN CITIES SITE WATER TREATMENT SYSTEM SCHEMATIC

PROJECT NO. 2014014
DATE 05-08-2014
SHT NO 1 OF 1
BY TF CHK ST



PLOTTED ON: 5/8/2014 3:43 PM
P:\2014\2014014 WILTON RANCHERIA FEASIBILITY STUDIES\CAD\WWW\14014-WWW SCHEMATIC.DWG

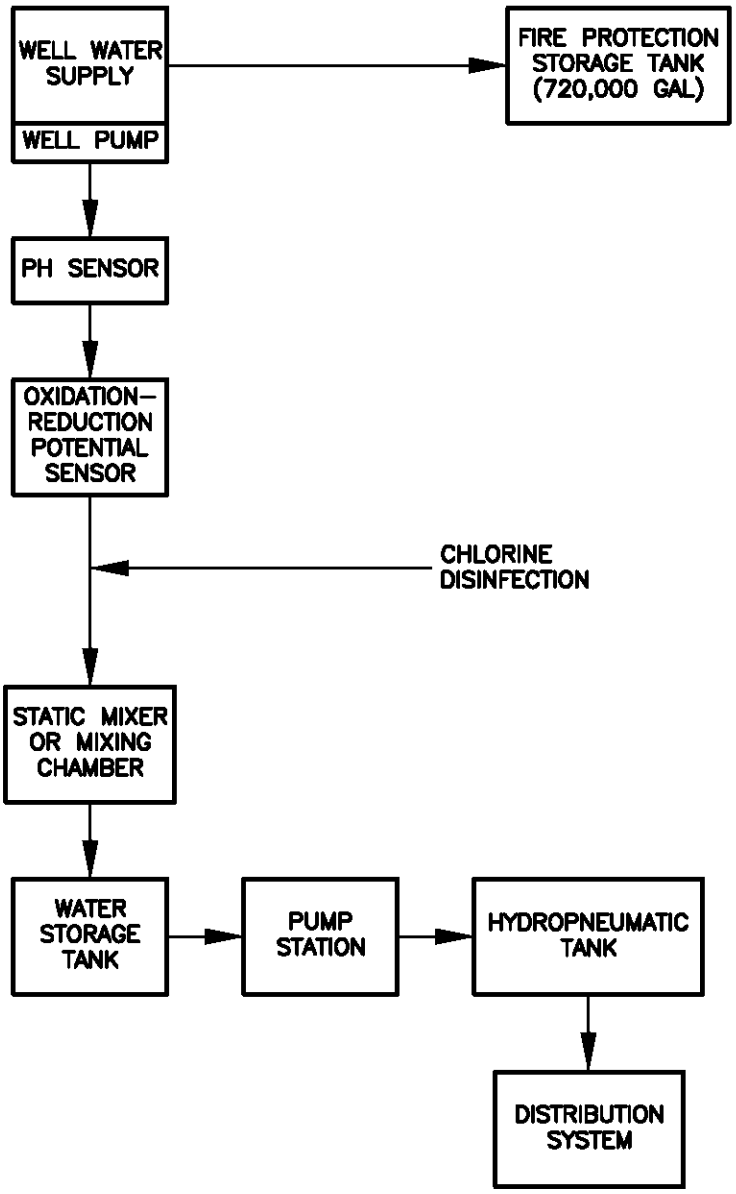
Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403 • 707-527-0775 • www.summit-sr.com

SUMMIT

WILTON RANCHERIA

HISTORIC RANCHERIA SITE WATER TREATMENT SYSTEM SCHEMATIC

PROJECT NO. 2014014
DATE 05-08-2014
SHT NO 1 OF 1
BY TF CHK ST

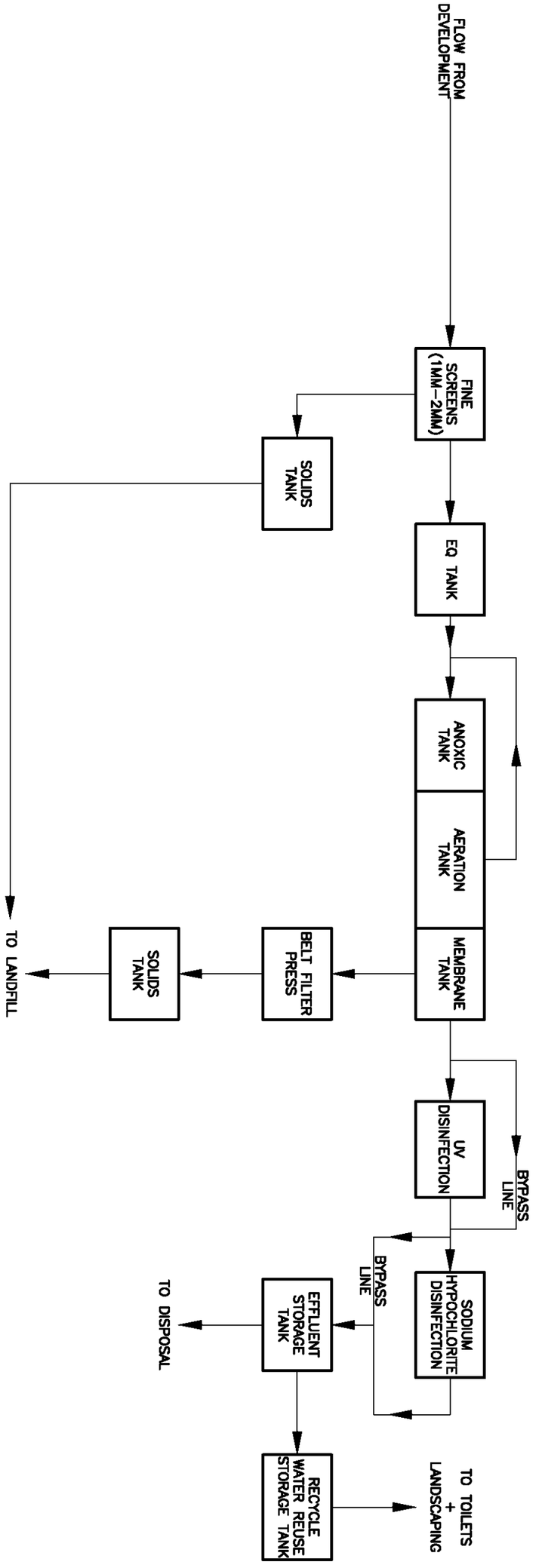


PLOTTED ON: 5/8/2014 3:43 PM
P:\2014\2014014 WILTON RANCHERIA FEASIBILITY STUDIES\CAD\WWW\14014-WWW SCHEMATIC.DWG

Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403 • 707-527-0775 • www.summit-sr.com

P:\2014\2014014 WILTON RANCHERIA FEASIBILITY STUDIES\CAD\WWW\14014-WW SCHEMATIC.DWG

PLOTTED ON: 4/7/2014 1:55 PM



WILTON RANCHERIA

ONSITE WASTERWATER TREATMENT PLANT SCHEMATIC

PROJECT NO. 2014014 DATE 03-20-2014

BY BL CHK KG SHT NO ___ OF 3

SUMMIT

Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

APPENDIX B: WATER & WASTEWATER DESIGN ASSUMPTIONS & CALCULATIONS

PRELIMINARY BUILDING PROGRAMS FOR ALTERNATIVES A THROUGH F
WASTEWATER PRODUCTION AND STRENGTH CALCULATIONS
IRRIGATION WATER DEMAND CALCULATIONS
WATER BALANCE CALCULATIONS

WILTON RANCHERIA

Program
KJA Project No. 12113
2/25/2014

ALTERNATIVES A & D

Project Program

Casino						Subtotals	Notes / Questions:
	Positions	***Per Seat***	***FOH***	***BOH***			
Gaming							
Slot Machines	1,900	32	incl		**0**		1950 shown on plans, + bars
Table Games	66	250	incl		**0**		
Floor Circulation			incl		**0**		
High Limit Slots	100	50	incl		**0**		On Main Floor
Main Floor:			96,360		**96,360**		
High Limit Tables	14	507	7,100		**7,100**		
Poker	24	283	6,800		**6,800**		
	2,104	**TOTAL**	**110,260**			**110,260**	
Casino FOH							
			FOH	***BOH***			
Promotions / Slot Club			1,500	500	**2,000**		
TBD			200	1,000	**1,200**		
High Limit Lounge			1,500		**1,500**		
Smoking Patio - Lobby Bar			1,500		**1,500**		
Hotel Lobby / Front Desk			2,200		**2,200**		
Spa			8,507	2,000	**10,500**		
Fitness			3,000		**3,000**		
Spa Restrooms			1,400		**1,400**		
Casino Restrooms 1			1,200		**1,200**		
Casino Restrooms 2			1,200		**1,200**		
Casino Restrooms 3			1,200		**1,200**		
Retail 1			1,200		**1,200**		
Retail 2			600		**600**		
Retail 3			800		**800**		
Entries / Vestibules (2)			1,200		**1,200**		
Bus Waiting			1,950		**1,950**		
Valet / Waiting			800	200	**1,000**		
		TOTAL	**29,957**	**3,700**		**33,650**	
Food and Beverage							
	Positions	***Per Seat***	***FOH***	***BOH***			
Center Bar / Lounge	70	26	1,800	200	**2,000**		
Sports Lounge	125	36	4,500	1,500	**6,000**		
Lobby Bar	40	50	2,000	1,150	**3,150**		
Buffet	360	26	9,450	6,300	**15,750**		
Café	150	25	3,750	incl above	**3,750**		
Café Extension (Bakery?)			600		**600**		
Steakhouse	150	27	4,075	2,400	**6,475**		
TBD			3,875		**3,875**		
Asian	125	34	4,225	2,860	**7,085**		
Quick Serve Restaurant	100	27	2,725	1,400	**4,125**		
Noodles	40	34	1,375	incl above	**1,375**		
High Limit Pantry			625	0	**625**		
Pool Bar / Grille	60	37	2,200	1,000	**3,200**		
Employee Dining	125	26	3,300	2,100	**5,400**		
Room Service Kitchen				incl above	**0**		
Service Bar 1				800	**800**		
Service Bar 2				800	**800**		
Service Bar 3				800	**800**		
TOTAL	**1345**		**44,500**	**21,310**		**65,810**	
Meeting / Convention							
			FOH	***BOH***			
Ball Room			24,800		**24,800**		Air walls to achieve 15k, 10k
Meeting Rooms (4)			6,000		**6,000**		
Prefunction			4,100		**4,100**		
Meeting Restrooms			1,050		**1,050**		
Stage / Platform			3,200		**3,200**		
Circulation (Public)			9,000		**9,000**		
Storage (3)				7,200	**7,200**		
Banquet Kitchen				3,400	**3,400**		
		TOTAL	**48,150**	**10,600**		**58,750**	
Casino Support: BOH							Notes / Questions:
			FOH	***BOH***			
Cage			1,200	3,735	**4,935**		
Surveillance (Mezz)				2,400	**2,400**		
Security				2,550	**2,550**		
Mens Locker Room				1,925	**1,925**		
Womens Locker Room				1,925	**1,925**		
Uniform Issue / Conveyor				2,500	**2,500**		
Slot Technician / Shop				3,000	**3,000**		
EVS				2,600	**2,600**		
Facilities Department				3,750	**3,750**		
IDF Headend / Distribution Closets				1,200	**1,200**		
AV Headend / Distribution Closets (Mezz)				1,200	**1,200**		
Training Room				2,400	**2,400**		
Break Room				400	**400**		
Smoking Patio - Employee				400	**400**		
Loading Dock				2,100	**2,100**		
Warehouse				9,325	**9,325**		
Dock Manager				400	**400**		
MEP - Tower Support				3,300	**3,300**		
MEP - Casino Support (Mezz)				4,550	**4,550**		
Pool BOH				1,575	**1,575**		
Circulation (Casino BOH)				23,050	**23,050**		
Circulation (Lower Level)				10,670	**10,670**		
		TOTAL	**1,200**	**84,955**		**86,155**	
Support: Aministration / Offices							
	Seats		***FOH***	***BOH***			
Executive Offices (Mezz)				2,800	**2,800**		
Hotel Offices				2,100	**2,100**		
Casino & Marketing Offices				1,625	**1,625**		
IT / Computers (Mezz)				2,400	**2,400**		
Human Resources				2,700	**2,700**		
Accounting (Mezz)				2,800	**2,800**		
Gaming Board Offices				0	**0**		
Food & Beverage Admin Offices (Mezz)				1,200	**1,200**		
BOH Offices (LL)				3,000	**3,000**		
Circulation (Mezzanine)				3,250	**3,250**		
		TOTAL	**0**	**21,875**		**21,875**	
PODIUM TOTAL			**234,067**	**142,440**	**376,500**	**376,500**	

WILTON RANCHERIA

Program
KJA Project No. 12113
2/25/2014

ALTERNATIVES A & D

Guestroom Floors							
Level	*Room Mods*	*Circ. Mods*	*FOH*	*BOH / Circ*	*Subtotal*		
Level 2	32	4	17,600	3,280	**20,880**		Tower is 9 bays, 30' bays,
Level 3	32	4	17,600	3,280	**20,880**		76' width, 274' length
Level 4	32	4	17,600	3,280	**20,880**		
Level 5	32	4	17,600	3,280	**20,880**		15'x35' GR Module = 525 s.f. per
Level 6	32	4	17,600	3,280	**20,880**		
Level 7	32	4	17,600	3,280	**20,880**		BOH / Circulation includes circulation
Level 8	32	4	17,600	3,280	**20,880**		modules and guestroom corridors
Level 9	32	4	17,600	3,280	**20,880**		
Level 10	32	4	17,600	3,280	**20,880**		
Level 11	32	4	17,600	3,280	**20,880**		
Level 12	32	4	17,600	3,280	**20,880**		
Total Modules:	**352**	**44**					
		TOTAL	**193,600**	**36,080**		**229,680**	
BUILDING TOTAL			**392,467**	**171,960**	**606,180**	**606,180**	
Site Improvements / Infrastructure							
			FOH	*BOH*			
Pool & Pool Deck			18,400		**18,400**		
Porte Cochere - Hotel			14,400		**14,400**		
Orchard			7,099		**7,099**		
Garden			7,399		**7,399**		
Garden			599		**599**		
Porte Cochere - Casino			7,750		**7,750**		
Sports Bar Patio			1,425		**1,200**		
Central Plant				6,749	**6,749**		
Water Treatment Facility							Kimley Horn stated 2.5 acres
		TOTAL	**57,072**	**6,749**		**63,596**	669,776
Parking							
	Spaces	*Per Space*	*FOH*	*BOH*			
Valet	500	350		175,000	**175,000**		
Structured	0	300	0		**0**		
Surface	2400	350	840,000		**840,000**		
Employee (Surface)	600	350	210,000		**210,000**		
	3,500	**TOTAL**	**1,050,000**	**175,000**		**1,225,000**	
PROGRAM TOTAL					**1,894,776**	**1,894,776**	

Guestroom Matrix - 11 Guestroom Floors

	Typical Rooms			Suites				
Floor	**Typical King**	**King @ Tower End**	**Typical DQ**	**Player Suite**	**Stair Suite**	**End Suite**	**Chairmans Suite**	**Rooms per Floor**
	K1	**K2**	**DQ**	**PS**	**SS**	**ES**	**CMS**	
S.F.	525	595	525	787	897	1120	2432	
2	10	2	11	2	1	2		28
3	10	2	11	2	1	2		28
4	10	2	11	2	1	2		28
5	10	2	11	2	1	2		28
6	10	2	11	2	1	2		28
7	10	2	11	2	1	2		28
8	10	2	11	2	1	2		28
9	10	2	11	2	1	2		28
10	10	2	11	2	1	2		28
11	10	2	11	2	1	2		28
12	10	2	11	2	1		1	27
Sub-Total Rooms:	110	22	121	22	11	20	1	307
Kings:	110	22		22	11	20	1	186
Queens:			121					121
	Total Typicals:		253		Total Suites:		54	

Total Typical Room Count:	**253**	82.4%	186 Kings	60.6%	Kings
Total Suite Count:	**54**	17.6%	121 Double Queens	39.4%	Double Queens
TOTAL KEY COUNT:	**307**	100%		100.0%	

WILTON RANCHERIA

Program
KJA Project No. 12113
1/10/2014

ALTERNATIVES B & E

Project Program - Reduced Intensity

Casino						Subtotals	Notes / Questions:
	Positions	*Per Seat*	*FOH*	*BOH*			
Gaming							
Slot Machines	1,800	32	incl		**0**		1950 shown on plans, + bars
Table Games	66	250	incl		**0**		
Floor Circulation			incl		**0**		
High Limit Slots	100	50	incl		**0**		On Main Floor
Main Floor:			96,360		**96,360**		
High Limit Tables	14	507	7,100		**7,100**		
Poker	24	283	6,800		**6,800**		
	2,004	**TOTAL**	**110,260**			**110,260**	
Casino FOH							
			FOH	*BOH*			
Promotions / Slot Club			1,500	500	**2,000**		
TBD			200	1,000	**1,200**		
High Limit Lounge			1,500		**1,500**		
Smoking Patio - Lobby Bar			1,500		**1,500**		
Casino Restrooms 1			1,200		**1,200**		
Casino Restrooms 2			1,200		**1,200**		
Casino Restrooms 3			1,200		**1,200**		
Retail 1			1,200		**1,200**		
Retail 2			600		**600**		
Retail 3			800		**800**		
Entries / Vestibules (2)			1,200		**1,200**		
Bus Waiting			1,950		**1,950**		
		TOTAL	**14,050**	**1,500**		**15,550**	
Food and Beverage							
	Positions	*Per Seat*	*FOH*	*BOH*			
Center Bar / Lounge	70	26	1,800	200	**2,000**		
Sports Lounge	125	36	4,500	1,500	**6,000**		
Lobby Bar	40	50	2,000	1,150	**3,150**		
Buffet	360	26	9,450	6,300	**15,750**		
Café	150	25	3,750	incl above	**3,750**		
Café Extension (Bakery?)			600		**600**		
Steakhouse	150	27	4,075	2,400	**6,475**		
TBD			3,875		**3,875**		
Asian	125	34	4,225	2,860	**7,085**		
Quick Serve Restaurant	100	27	2,725	1,400	**4,125**		
Noodles	40	34	1,375	incl above	**1,375**		
High Limit Pantry			625	0	**625**		
Employee Dining	125	26	3,300	2,100	**5,400**		
Room Service Kitchen				incl above	**0**		
Service Bar 1				800	**800**		
Service Bar 2				800	**800**		
Service Bar 3				800	**800**		
TOTAL	**1285**		**42,300**	**20,310**		**62,610**	
Casino Support: BOH							Notes / Questions:
			FOH	*BOH*			
Cage			1,200	3,735	**4,935**		
Surveillance (Mezz)				2,400	**2,400**		
Security				2,550	**2,550**		
Mens Locker Room				1,925	**1,925**		
Womens Locker Room				1,925	**1,925**		
Uniform Issue / Conveyor				2,500	**2,500**		
Slot Technician / Shop				3,000	**3,000**		
EVS				2,600	**2,600**		
Facilities Department				3,750	**3,750**		
IDF Headend / Distribution Closets				1,200	**1,200**		
AV Headend / Distribution Closets (Mezz)				1,200	**1,200**		
Training Room				2,400	**2,400**		
Break Room				400	**400**		
Smoking Patio - Employee				400	**400**		
Loading Dock				2,100	**2,100**		
Warehouse				9,325	**9,325**		
Dock Manager				400	**400**		
MEP - Tower Support				3,300	**3,300**		
MEP - Casino Support (Mezz)				4,550	**4,550**		
Circulation (Casino BOH)				23,050	**23,050**		
Circulation (Lower Level)				10,670	**10,670**		
		TOTAL	**1,200**	**83,380**		**84,580**	
Support: Aministration / Offices							
		Seats	*FOH*	*BOH*			
Executive Offices (Mezz)				2,800	**2,800**		
Casino & Marketing Offices				1,625	**1,625**		
IT / Computers (Mezz)				2,400	**2,400**		
Human Resources				2,700	**2,700**		
Accounting (Mezz)				2,800	**2,800**		
Gaming Board Offices				0	**0**		
Food & Beverage Admin Offices (Mezz)				1,200	**1,200**		
BOH Offices (LL)				3,000	**3,000**		
Circulation (Mezzanine)				3,250	**3,250**		
		TOTAL	**0**	**19,775**		**19,775**	
PODIUM TOTAL			**167,810**	**124,965**	**292,775**	**292,775**	

Site Improvements / Infrastructure							
			FOH	*BOH*			
Porte Cochere - Casino			7,750		**7,750**		
Sports Bar Patio			1,425		**1,200**		
Central Plant				6,749	**6,749**		
Water Treatment Facility							Kimley Horn stated 2.5 acres
		TOTAL	**9,175**	**6,749**		**15,699**	#REF!
Parking							
	Spaces	*Per Space*	*FOH*	*BOH*			
Valet	500	350		175,000	**175,000**		
Structured	0	300	0		**0**		
Surface	2400	350	840,000		**840,000**		
Employee (Surface)	600	350	210,000		**210,000**		
3,500	**TOTAL**		**1,050,000**	**175,000**		**1,225,000**	
PROGRAM TOTAL					**1,240,699**	**1,240,699**	

WILTON RANCHERIA

Program
KJA Project No. 12113
1/12/2014

ALTERNATIVE C

Project Program - Alternate Use								
Shopping Center							**Subtotals**	**Notes / Questions:**
			FOH					
Retail			185,000		**185,000**			
Super Grocery Store			200,000		**200,000**			
Membership Warehouse			125,000		**125,000**			
Home Improvement			145,000		**145,000**			
Restaurants			23,000		**23,000**			
Gas Station / Car Wash			8,000		**8,000**			
		TOTAL	**686,000**	**0**			**686,000**	
Parking								
	Spaces	***Per Space***	***FOH***	***BOH***				
Surface	3320	350	1,162,000		**1,162,000**			
	3,320	**TOTAL**	**1,162,000**	**0**			**1,162,000**	
PROGRAM TOTAL					**1,162,000**		**1,848,000**	

WILTON RANCHERIA

Program
KJA Project No. 12113
2/25/2014

ALTERNATIVE F

Project Program - Mall Site

Casino						Subtotals	Notes / Questions:
	Positions	***Per Seat***	***FOH***	***BOH***			
Gaming							
Slot Machines	1,900	32	incl		**0**		1950 shown on plans, + bars
Table Games	66	250	incl		**0**		
Floor Circulation			incl		**0**		
High Limit Slots	100	50	incl		**0**		On Main Floor
Main Floor:			96,360		**96,360**		
High Limit Tables	14	507	7,100		**7,100**		
Poker	24	283	6,800		**6,800**		
	2,104	**TOTAL**	**110,260**			**110,260**	
Casino FOH							
			FOH	***BOH***			
Promotions / Slot Club			1,500	500	**2,000**		
TBD			200	1,000	**1,200**		
High Limit Lounge			1,500		**1,500**		
Smoking Patio - Lobby Bar			1,500		**1,500**		
Hotel Lobby / Front Desk			2,200		**2,200**		
Spa			8,507	2,000	**10,500**		
Fitness			3,000		**3,000**		
Spa Restrooms			1,400		**1,400**		
Casino Restrooms 1			1,200		**1,200**		
Casino Restrooms 2			1,200		**1,200**		
Casino Restrooms 3			1,200		**1,200**		
Retail 1			1,200		**1,200**		
Retail 2			600		**600**		
Retail 3			800		**800**		
Entries / Vestibules (2)			1,200		**1,200**		
Bus Waiting			1,950		**1,950**		
Valet / Waiting			800	200	**1,000**		
		TOTAL	**29,957**	**3,700**		**33,650**	
Food and Beverage							
	Positions	***Per Seat***	***FOH***	***BOH***			
Center Bar / Lounge	70	26	1,800	200	**2,000**		
Sports Lounge	125	36	4,500	1,500	**6,000**		
Lobby Bar	40	50	2,000	1,150	**3,150**		
Buffet	360	26	9,450	6,300	**15,750**		
Café (Common w/Mall)	150	27	4,000	incl above	**4,000**		
Café Extension			600		**600**		
Steakhouse (Common w/Mall)	150	27	4,075	2,400	**6,475**		
TBD (Common w/Mall)			5,500	3,000	**8,500**		
Asian (Common w/Mall)	125	34	4,225	2,860	**7,085**		
Quick Serve Restaurant	100	27	2,725	1,400	**4,125**		
Noodles	40	34	1,375	incl above	**1,375**		
High Limit Pantry			625	0	**625**		
Pool Bar / Grille	60	37	2,200	1,000	**3,200**		
Employee Dining	125	26	3,300	2,100	**5,400**		
Room Service Kitchen				incl above	**0**		
Service Bar 1				800	**800**		
Service Bar 2				800	**800**		
Service Bar 3				800	**800**		
TOTAL	**1345**		**46,375**	**24,310**		**70,685**	
Meeting / Convention							
			FOH	***BOH***			
Ball Room			24,800		**24,800**		Air walls to achieve 15k, 10k
Meeting Rooms (4)			6,000		**6,000**		
Prefunction			4,100		**4,100**		
Meeting Restrooms			1,050		**1,050**		
Stage / Platform			3,200		**3,200**		
Circulation (Public)			9,000		**9,000**		
Storage (3)				7,200	**7,200**		
Banquet Kitchen				3,400	**3,400**		
		TOTAL	**48,150**	**10,600**		**58,750**	
Casino Support: BOH							Notes / Questions:
			FOH	***BOH***			
Cage			1,200	3,735	**4,935**		
Surveillance (Mezz)				2,400	**2,400**		
Security				2,550	**2,550**		
Mens Locker Room				1,925	**1,925**		
Womens Locker Room				1,925	**1,925**		
Uniform Issue / Conveyor				2,500	**2,500**		
Slot Technician / Shop				3,000	**3,000**		
EVS				2,600	**2,600**		
Facilities Department				3,750	**3,750**		
IDF Headend / Distribution Closets				1,200	**1,200**		
AV Headend / Distribution Closets (Mezz)				1,200	**1,200**		
Training Room				2,400	**2,400**		
Break Room				400	**400**		
Smoking Patio - Employee				400	**400**		
Loading Dock				2,100	**2,100**		
Warehouse				9,325	**9,325**		
Dock Manager				400	**400**		
MEP - Tower Support				3,300	**3,300**		
MEP - Casino Support (Mezz)				4,550	**4,550**		
Pool BOH				1,575	**1,575**		
Circulation (Casino BOH)				23,050	**23,050**		
Circulation (Lower Level)				10,670	**10,670**		
		TOTAL	**1,200**	**84,955**		**86,155**	
Support: Aministration / Offices							
	Seats		***FOH***	***BOH***			
Executive Offices (Mezz)				2,800	**2,800**		
Hotel Offices				2,100	**2,100**		
Casino & Marketing Offices				1,625	**1,625**		
IT / Computers (Mezz)				2,400	**2,400**		
Human Resources				2,700	**2,700**		
Accounting (Mezz)				2,800	**2,800**		
Gaming Board Offices				0	**0**		
Food & Beverage Admin Offices (Mezz)				1,200	**1,200**		
BOH Offices (LL)				3,000	**3,000**		
Circulation (Mezzanine)				3,250	**3,250**		
		TOTAL	**0**	**21,875**		**21,875**	
PODIUM TOTAL			**235,942**	**145,440**	**381,375**	**381,375**	

WILTON RANCHERIA

Program
KJA Project No. 12113
2/25/2014

ALTERNATIVE F

Guestroom Floors							
Level	*Room Mods*	*Circ. Mods*	*FOH*	*BOH / Circ*	*Subtotal*		
Level 2	32	4	17,600	3,280	**20,880**		Tower is 9 bays, 30' bays,
Level 3	32	4	17,600	3,280	**20,880**		76' width, 274' length
Level 4	32	4	17,600	3,280	**20,880**		
Level 5	32	4	17,600	3,280	**20,880**		15'x35' GR Module = 525 s.f. per
Level 6	32	4	17,600	3,280	**20,880**		
Level 7	32	4	17,600	3,280	**20,880**		BOH / Circulation includes circulation
Level 8	32	4	17,600	3,280	**20,880**		modules and guestroom corridors
Level 9	32	4	17,600	3,280	**20,880**		
Level 10	32	4	17,600	3,280	**20,880**		
Level 11	32	4	17,600	3,280	**20,880**		
Level 12	32	4	17,600	3,280	**20,880**		
Total Modules:	**352**	**44**					
		TOTAL	**193,600**	**36,080**		**229,680**	
BUILDING TOTAL			**394,342**	**174,960**	**611,055**	**611,055**	
Site Improvements / Infrastructure							
			FOH	*BOH*			
Pool & Pool Deck			18,400		**18,400**		
Porte Cochere - Hotel			14,400		**14,400**		
Orchard			7,099		**7,099**		
Garden			7,399		**7,399**		
Garden			599		**599**		
Porte Cochere - Casino			7,750		**7,750**		
Sports Bar Patio			1,425		**1,200**		
Central Plant				6,749	**6,749**		
Water Treatment Facility							Kimley Horn stated 2.5 acres
		TOTAL	**57,072**	**6,749**		**63,596**	674,651
Parking							
	Spaces	*Per Space*	*FOH*	*BOH*			
Valet	400	350		140,000	**140,000**		
Structured	0	300	0		**0**		
Surface	790	350	276,500		**276,500**		
Employee (Surface)	500	350	175,000		**175,000**		
	1,690	**TOTAL**	**451,500**	**140,000**		**591,500**	
PROGRAM TOTAL					**1,266,151**	**1,266,151**	

Guestroom Matrix - 11 Guestroom Floors

	Typical Rooms			Suites				
Floor	**Typical King**	**King @ Tower End**	**Typical DQ**	**Player Suite**	**Stair Suite**	**End Suite**	**Chairmans Suite**	**Rooms per Floor**
	K1	**K2**	**DQ**	**PS**	**SS**	**ES**	**CMS**	
S.F.	525	595	525	787	897	1120	2432	
2	10	2	11	2	1	2		28
3	10	2	11	2	1	2		28
4	10	2	11	2	1	2		28
5	10	2	11	2	1	2		28
6	10	2	11	2	1	2		28
7	10	2	11	2	1	2		28
8	10	2	11	2	1	2		28
9	10	2	11	2	1	2		28
10	10	2	11	2	1	2		28
11	10	2	11	2	1	2		28
12	10	2	11	2	1		1	27
Sub-Total Rooms:	110	22	121	22	11	20	1	307
Kings:	110	22		22	11	20	1	186
Queens:			121					121
	Total Typicals:		253		Total Suites:		54	

Total Typical Room Count:	**253**	82.4%	186 Kings	60.6%	Kings
Total Suite Count:	**54**	17.6%	121 Double Queens	39.4%	Double Queens
TOTAL KEY COUNT:	**307**	100%		100.0%	

LANDSCAPING IRRIGATION DEMAND

SITE CHARACTERISTICS

Assumed Landscape Irrigation Area

Alternative	Landscaped Area (ft^2)	Flood & Detention Pond Area (ft^2)	Bioswale Area (ft^2)	Total Area (ft^2)
A	441,335	178,009	81,478	700,822
B	723,217	178,009	81,058	982,284
C	467,504	178,009	112,891	758,404
D	847,436	947,251	66,303	1,860,990
E	769,300	852,787	67,088	1,689,175
F	110,074	0	0	110,074

Assumed Crop Coefficient

The range of typical landscaping crop coefficients was discussed in the landscape Irrigation System Evaluation and Management report by David A. Shaw & Dennis R. Pittenger of the UC Cooperative Extension

Crop Coefficients		
Lower Range	0.18	i.e. rosemary bush (low end)
Upper Range	0.8	i.e. turf grasses (high end)
Selected Value	0.8	

Sacramento County Evapotranspiration (Zone 14) & Precipitation

Eto below is based on CA Irrigation Management Information System (CIMIS) Reference Evapotranspiration. Rainfall data is from WorldClimate.com

		Average Rainfall (in)	
Month	Monthly Ave Reference Evapotranspiration (in/month)	Sloughhouse, CA	Walnut Grove, CA
January	1.55	3	3.6
February	2.24	2.5	3.4
March	3.72	3.7	1.8
April	5.1	1.5	2.2
May	6.82	0.5	0.8
June	7.8	0.1	0.1
July	8.68	0	0
August	7.75	0	0
September	5.7	0	0.2
October	4.03	0.5	0.6
November	2.1	2.8	1.4
December	1.55	3.4	3.1
Total	57.0	18.0	17.1

LANDSCAPING IRRIGATION DEMAND

Alternative: A

Assumed Landscaping Area: 441,335 ft²
Assumed Flood & Storm Pond Area: 178,009 ft²
Assumed Bioswale Area: 81,478 ft²

Weather Station: Walnut Grove, CA

Month	Reference Evapotranspiration (ET) (in/month)	Crop Coefficient	Crop ET (in)	Average Precipitation (in)	Crop Irrigation Demand (in)
January	1.55	0.8	1.24	3.6	0.00
February	2.24	0.8	1.79	3.4	0.00
March	3.72	0.8	2.98	1.8	1.18
April	5.1	0.8	4.08	2.2	1.88
May	6.82	0.8	5.46	0.8	4.66
June	7.8	0.8	6.24	0.1	6.14
July	8.68	0.8	6.94	0	6.94
August	7.75	0.8	6.20	0	6.20
September	5.7	0.8	4.56	0.2	4.36
October	4.03	0.8	3.22	0.6	2.62
November	2.1	0.8	1.68	1.4	0.28
December	1.55	0.8	1.24	3.1	0.00
Total	**57.04**		**45.63**	**17.2**	**34.26**

	Irrigation Demand (gal)				Average Irrigation Demand (gpd)				
Month	Landscaping	Flood & Storm Pond	Bioswales	Number of Days per Month	Landscaping	Flood & Storm Pond	Bioswales	Total Irrigation Demand (gpd)	Annual Demand (gal)
January	0	0	0	31	0	0	0	0	0
February	0	0	0	28	0	0	0	0	0
March	323,516	130,488	59,727	31	10,436	4,209	1,927	16,572	513,731
April	517,186	208,603	95,481	30	17,240	6,953	3,183	27,376	821,270
May	1,280,860	516,625	236,469	31	41,318	16,665	7,628	65,611	2,033,954
June	1,689,107	681,288	311,838	30	56,304	22,710	10,395	89,408	2,682,233
July	1,910,286	770,499	352,672	31	61,622	24,855	11,377	97,853	3,033,457
August	1,705,613	687,945	314,885	31	55,020	22,192	10,158	87,369	2,708,443
September	1,199,431	483,781	221,435	30	39,981	16,126	7,381	63,488	1,904,647
October	721,859	291,156	133,268	31	23,286	9,392	4,299	36,977	1,146,283
November	77,028	31,069	14,221	30	2,568	1,036	474	4,077	122,317
December	0	0	0	31	0	0	0	0	0
Total	**9,424,885**	**3,801,453**	**1,739,995**	**365**	**307,773**	**124,138**	**56,820**	**488,732**	**14,966,334**

LANDSCAPING IRRIGATION DEMAND

Alternative: B

Assumed Landscaping Area: 723,217 ft²
Assumed Flood & Storm Pond Area: 178,009 ft²
Assumed Bioswale Area: 81,058 ft²

Weather Station: Walnut Grove, CA

Month	Reference Evapotranspiration (ET) (in/month)	Crop Coefficient	Crop ET (in)	Average Precipitation (in)	Crop Irrigation Demand (in)
January	1.55	0.8	1.24	3.6	0.00
February	2.24	0.8	1.79	3.4	0.00
March	3.72	0.8	2.98	1.8	1.18
April	5.1	0.8	4.08	2.2	1.88
May	6.82	0.8	5.46	0.8	4.66
June	7.8	0.8	6.24	0.1	6.14
July	8.68	0.8	6.94	0	6.94
August	7.75	0.8	6.20	0	6.20
September	5.7	0.8	4.56	0.2	4.36
October	4.03	0.8	3.22	0.6	2.62
November	2.1	0.8	1.68	1.4	0.28
December	1.55	0.8	1.24	3.1	0.00
Total	**57.04**		**45.63**	**17.2**	**34.26**

	Irrigation Demand (gal)				Average Irrigation Demand (gpd)				
Month	Landscaping	Flood & Storm Pond	Bioswales	Number of Days per Month	Landscaping	Flood & Storm Pond	Bioswales	Total Irrigation Demand (gpd)	Annual Demand (gal)
January	0	0	0	31	0	0	0	0	0
February	0	0	0	28	0	0	0	0	0
March	530,147	130,488	59,419	31	17,102	4,209	1,917	23,228	720,053
April	847,514	208,603	94,989	30	28,250	6,953	3,166	38,370	1,151,106
May	2,098,949	516,625	235,250	31	67,708	16,665	7,589	91,962	2,850,824
June	2,767,944	681,288	310,231	30	92,265	22,710	10,341	125,315	3,759,463
July	3,130,392	770,499	350,854	31	100,980	24,855	11,318	137,153	4,251,744
August	2,794,993	687,945	313,262	31	90,161	22,192	10,105	122,458	3,796,200
September	1,965,511	483,781	220,294	30	65,517	16,126	7,343	88,986	2,669,586
October	1,182,913	291,156	132,581	31	38,158	9,392	4,277	51,827	1,606,650
November	126,225	31,069	14,147	30	4,208	1,036	472	5,715	171,441
December	0	0	0	31	0	0	0	0	0
Total	**15,444,588**	**3,801,453**	**1,731,026**	**365**	**504,349**	**124,138**	**56,527**	**685,015**	**20,977,068**

LANDSCAPING IRRIGATION DEMAND

Alternative: C

Assumed Landscaping Area: 467,504 ft²
Assumed Flood & Storm Pond Area: 178,009 ft²
Assumed Bioswale Area: 112,891 ft²

Weather Station: Walnut Grove, CA

Month	Reference Evapotranspiration (ET) (in/month)	Crop Coefficient	Crop ET (in)	Average Precipitation (in)	Crop Irrigation Demand (in)
January	1.55	0.8	1.24	3.6	0.00
February	2.24	0.8	1.79	3.4	0.00
March	3.72	0.8	2.98	1.8	1.18
April	5.1	0.8	4.08	2.2	1.88
May	6.82	0.8	5.46	0.8	4.66
June	7.8	0.8	6.24	0.1	6.14
July	8.68	0.8	6.94	0	6.94
August	7.75	0.8	6.20	0	6.20
September	5.7	0.8	4.56	0.2	4.36
October	4.03	0.8	3.22	0.6	2.62
November	2.1	0.8	1.68	1.4	0.28
December	1.55	0.8	1.24	3.1	0.00
Total	**57.04**		**45.63**	**17.2**	**34.26**

	Irrigation Demand (gal)				Average Irrigation Demand (gpd)				
Month	Landscaping	Flood & Storm Pond	Bioswales	Number of Days per Month	Landscaping	Flood & Storm Pond	Bioswales	Total Irrigation Demand (gpd)	Annual Demand (gal)
January	0	0	0	31	0	0	0	0	0
February	0	0	0	28	0	0	0	0	0
March	342,699	130,488	82,754	31	11,055	4,209	2,669	17,934	555,940
April	547,852	208,603	132,293	30	18,262	6,953	4,410	29,625	888,748
May	1,356,809	516,625	327,637	31	43,768	16,665	10,569	71,002	2,201,070
June	1,789,262	681,288	432,064	30	59,642	22,710	14,402	96,754	2,902,614
July	2,023,557	770,499	488,640	31	65,276	24,855	15,763	105,893	3,282,696
August	1,806,747	687,945	436,286	31	58,282	22,192	14,074	94,548	2,930,979
September	1,270,551	483,781	306,808	30	42,352	16,126	10,227	68,705	2,061,140
October	764,662	291,156	184,648	31	24,667	9,392	5,956	40,015	1,240,466
November	81,595	31,069	19,703	30	2,720	1,036	657	4,412	132,367
December	0	0	0	31	0	0	0	0	0
Total	**9,983,735**	**3,801,453**	**2,410,832**	**365**	**326,023**	**124,138**	**78,727**	**528,888**	**16,196,021**

LANDSCAPING IRRIGATION DEMAND

Alternative: D

Assumed Landscaping Area: 847,436 ft²
Assumed Flood & Storm Pond Area: 947,251 ft²
Assumed Bioswale Area: 66,303 ft²

Weather Station: Sloughhouse, CA

Month	Reference Evapotranspiration (ET) (in/month)	Crop Coefficient	Crop ET (in)	Average Precipitation (in)	Crop Irrigation Demand (in)
January	1.55	0.8	1.24	3	0.00
February	2.24	0.8	1.79	2.5	0.00
March	3.72	0.8	2.98	3.7	0.00
April	5.1	0.8	4.08	1.5	2.58
May	6.82	0.8	5.46	0.5	4.96
June	7.8	0.8	6.24	0.1	6.14
July	8.68	0.8	6.94	0	6.94
August	7.75	0.8	6.20	0	6.20
September	5.7	0.8	4.56	0	4.56
October	4.03	0.8	3.22	0.5	2.72
November	2.1	0.8	1.68	2.8	0.00
December	1.55	0.8	1.24	3.4	0.00
Total	**57.04**		**45.63**	**18.0**	**34.10**

	Irrigation Demand (gal)				Average Irrigation Demand (gpd)				
Month	**Landscaping**	**Flood & Storm Pond**	**Bioswales**	**Number of Days per Month**	**Landscaping**	**Flood & Storm Pond**	**Bioswales**	**Total Irrigation Demand (gpd)**	**Annual Demand (gal)**
January	0	0	0	31	0	0	0	0	0
February	0	0	0	28	0	0	0	0	0
March	0	0	0	31	0	0	0	0	0
April	1,362,847	1,523,369	106,628	30	45,428	50,779	3,554	99,761	2,992,844
May	2,617,933	2,926,286	204,826	31	84,449	94,396	6,607	185,453	5,749,045
June	3,243,364	3,625,382	253,759	30	108,112	120,846	8,459	237,417	7,122,505
July	3,668,065	4,100,106	286,988	31	118,325	132,261	9,258	259,844	8,055,159
August	3,275,058	3,660,809	256,239	31	105,647	118,091	8,266	232,003	7,192,106
September	2,408,752	2,692,466	188,460	30	80,292	89,749	6,282	176,323	5,289,678
October	1,438,912	1,608,394	112,580	31	46,417	51,884	3,632	101,932	3,159,887
November	0	0	0	30	0	0	0	0	0
December	0	0	0	31	0	0	0	0	0
Total	**18,014,930**	**20,136,813**	**1,409,480**	**365**	**588,670**	**658,006**	**46,057**	**1,292,733**	**39,561,223**

LANDSCAPING IRRIGATION DEMAND

Alternative: E

Assumed Landscaping Area: 769,300 ft²
Assumed Flood & Storm Pond Area: 852,787 ft²
Assumed Bioswale Area: 67,088 ft²

Weather Station: Sloughhouse, CA

Month	Reference Evapotranspiration (ET) (in/month)	Crop Coefficient	Crop ET (in)	Average Precipitation (in)	Crop Irrigation Demand (in)
January	1.55	0.8	1.24	3	0.00
February	2.24	0.8	1.79	2.5	0.00
March	3.72	0.8	2.98	3.7	0.00
April	5.1	0.8	4.08	1.5	2.58
May	6.82	0.8	5.46	0.5	4.96
June	7.8	0.8	6.24	0.1	6.14
July	8.68	0.8	6.94	0	6.94
August	7.75	0.8	6.20	0	6.20
September	5.7	0.8	4.56	0	4.56
October	4.03	0.8	3.22	0.5	2.72
November	2.1	0.8	1.68	2.8	0.00
December	1.55	0.8	1.24	3.4	0.00
Total	**57.04**		**45.63**	**18.0**	**34.10**

	Irrigation Demand (gal)				Average Irrigation Demand (gpd)				
Month	Landscaping	Flood & Storm Pond	Bioswales	Number of Days per Month	Landscaping	Flood & Storm Pond	Bioswales	Total Irrigation Demand (gpd)	Annual Demand (gal)
January	0	0	0	31	0	0	0	0	0
February	0	0	0	28	0	0	0	0	0
March	0	0	0	31	0	0	0	0	0
April	1,237,188	1,371,452	107,891	30	41,240	45,715	3,596	90,551	2,716,531
May	2,376,552	2,634,464	207,251	31	76,663	84,983	6,686	168,331	5,218,267
June	2,944,316	3,263,843	256,764	30	98,144	108,795	8,559	215,497	6,464,923
July	3,329,859	3,691,226	290,385	31	107,415	119,072	9,367	235,854	7,311,470
August	2,973,088	3,295,737	259,273	31	95,906	106,314	8,364	210,584	6,528,098
September	2,186,658	2,423,962	190,691	30	72,889	80,799	6,356	160,044	4,801,311
October	1,306,241	1,447,998	113,913	31	42,137	46,710	3,675	92,521	2,868,152
November	0	0	0	30	0	0	0	0	0
December	0	0	0	31	0	0	0	0	0
Total	**16,353,902**	**18,128,682**	**1,426,167**	**365**	**534,393**	**592,387**	**46,603**	**1,173,382**	**35,908,752**

LANDSCAPING IRRIGATION DEMAND

Alternative: F

Assumed Landscaping Area: 110,074 ft²
Assumed Flood & Storm Pond Area: 0 ft²
Assumed Bioswale Area: 0 ft²

Weather Station: Sloughhouse, CA

Month	Reference Evapotranspiration (ET) (in/month)	Crop Coefficient	Crop ET (in)	Average Precipitation (in)	Crop Irrigation Demand (in)
January	1.55	0.8	1.24	3	0.00
February	2.24	0.8	1.79	2.5	0.00
March	3.72	0.8	2.98	3.7	0.00
April	5.1	0.8	4.08	1.5	2.58
May	6.82	0.8	5.46	0.5	4.96
June	7.8	0.8	6.24	0.1	6.14
July	8.68	0.8	6.94	0	6.94
August	7.75	0.8	6.20	0	6.20
September	5.7	0.8	4.56	0	4.56
October	4.03	0.8	3.22	0.5	2.72
November	2.1	0.8	1.68	2.8	0.00
December	1.55	0.8	1.24	3.4	0.00
Total	**57.04**		**45.63**	**18.0**	**34.10**

	Irrigation Demand (gal)				Average Irrigation Demand (gpd)				
Month	Landscaping	Flood & Storm Pond	Bioswales	Number of Days per Month	Landscaping	Flood & Storm Pond	Bioswales	Total Irrigation Demand (gpd)	Annual Demand (gal)
January	0	0	0	31	0	0	0	0	0
February	0	0	0	28	0	0	0	0	0
March	0	0	0	31	0	0	0	0	0
April	177,021	0	0	30	5,901	0	0	5,901	177,021
May	340,045	0	0	31	10,969	0	0	10,969	340,045
June	421,283	0	0	30	14,043	0	0	14,043	421,283
July	476,447	0	0	31	15,369	0	0	15,369	476,447
August	425,399	0	0	31	13,723	0	0	13,723	425,399
September	312,874	0	0	30	10,429	0	0	10,429	312,874
October	186,901	0	0	31	6,029	0	0	6,029	186,901
November	0	0	0	30	0	0	0	0	0
December	0	0	0	31	0	0	0	0	0
Total	**2,339,971**	**0**	**0**	**365**	**76,463**	**0**	**0**	**76,463**	**2,339,971**

DETAILED WASTEWATER PRODUCTION TABLE

Alternative A

Item	Unit	# of Units	Use Frequency	GPD/Unit	Peak Day Flow (GPD)	Average Day Flow (GPD) (j)	BOD	TSS
Casino								
Slot Machines (h)	Seats	2000	15	3	90000	67500	200	200
Tables (a) (h)	Seats	520	15	3	23400	17550	200	200
Casino FOH								
Spa(c) (g)	Person	300	1	10	3000	2250	200	200
Fitness(c)	Square Feet	3000	1	0.05	150	113	200	200
Retail(c)	Square Feet	2600	1	0.13	338	254	200	200
Food and Beverage								
Bar/Lounges (c)	Seats	235	1	20	4700	3525	200	200
Restaurants/Café (d)(i)	Seats	1110	3	18	59940	44955	880	230
Convention Center								
Convention Center (b) (d)	Seats	5000	1	5	25000	18750	200	200
Hotel								
Hotel Rooms (e)	Rooms	302	1	200	60400	45300	200	200
Employees								
Employees (f)	Employees	2013	1	20	40260	30195	200	200
				Flow Totals	**307188**	**230391**	**333**	**206**

a) Assumes five people at a time per table (104 tables).

b) Assumes that the convention center seats up to 5,000 people.

c) GPD usage from North Carolina Office of Administrative Hearings 15A NCAC 02T.0114 (http://reports.oah.state.nc.us/ncac.asp)

d) GPD usage from Uniform Plumbing Code

e) GPD based on casino wastewater treatment plant operator' prior experience

f) Assumes three 8-hour shifts

g) Assumed number of spa users during a peak day event

h) Assumed number of uses

i) Strength of wastewater form restaurants is based on pretreated wastewater study (Barnstable County Department of Health and Enivronment, 2013).

j) Average day flows assumed to be 75% of peak day flows

k) All wastewater quality strengths (except for restaurants) were based on an assumed 200 mg/L of BOD and TSS, which is typical for domestic wastewater.

DETAILED WASTEWATER PRODUCTION TABLE

Alternative B

Item	Unit	# of Units	Use Frequency	GPD/Unit	Peak Day Flow (GPD)	Average Day Flow (GPD) (j)	BOD	TSS
Casino								
Slot Machines (h)	Seats	1,900	15	3	85500	64125	200	200
Tables (a) (h)	Seats	520	15	3	23400	17550	200	200
Casino FOH								
Retail(c)	Square Feet	2,600	1	0.13	338	254	200	200
Food and Beverage								
Bar/Lounges (c)	Seats	235	1	20	4700	3525	200	200
Restaurants/Café (d)(i)	Seats	1,050	3	18	56700	42525	880	230
Employees								
Employees (f)	Employees	1,674	1	20	33480	25110	200	200
				Flow Totals	**204118**	**153089**	**389**	**208**

a) Assumes five people at a time per table (104 tables).
b) Note used
c) GPD usage from North Carolina Office of Administrative Hearings 15A NCAC 02T.0114 (http://reports.oah.state.nc.us/ncac.asp)
d) GPD usage from Uniform Plumbing Code
e) Not used
f) Assumes three 8-hour shifts
g) Not used
h) Assumed number of uses
i) Strength of wastewater form restaurants is based on pretreated wastewater study (Barnstable County Department of Health and Enivronment, 2013).
j) Average day flows assumed to be 75% of peak day flows
k) All wastewater quality strengths (except for restaurants) were based on an assumed 200 mg/L of BOD and TSS, which is typical for domestic wastewater.

DETAILED WASTEWATER PRODUCTION TABLE

Alternative C

Item	Unit	# of Units	GPD/Unit	Peak Day Flow (GPD)	Average Day Flow (GPD) (e)	BOD	TSS
Restaurants/Lounges (a)(d)	Square Feet	23000	2.0	46000	34500	880	230
Grocery Store (b)	Square Feet	200000	0.13	26000	19500	200	200
Retail (b)	Square Feet	185000	0.13	24050	18038	200	200
Gas Station w/ Car Wash (b) (c)	Square Feet	8000	0.8	6400	4800	200	200
Home Improvement (b)	Square Feet	145000	0.13	18850	14138	200	200
Warehouse Membership (b)	Square Feet	125000	0.13	16250	12188	200	200
			Total Flow	**137550**	**103163**	**427**	**210**

a) Assumes one seat for every 27 sq ft of floor space and three meals served per seat per day

b) GPD usage from North Carolina Office of Administrative Hearings 15A NCAC 02T.0114 (http://reports.oah.state.nc.us/ncac.asp)

c) Assumes 4 bays and 6 plumbing features

d) Strength of wastewater form restaurants is based on pretreated wastewater study (Barnstable County Department of Health and Enivronment, 2013).

e) Average day flows assumed to be 75% of peak day flows

k) All wastewater quality strengths (except for restaurants) were based on an assumed 200 mg/L of BOD and TSS, which is typical for domestic wastewater.

DETAILED WASTEWATER PRODUCTION TABLE

Alternative D

Item	Unit	# of Units	Use Frequency	GPD/Unit	Peak Day Flow (GPD)	Average Day Flow (GPD) (j)	BOD	TSS
Casino								
Slot Machines (h)	Seats	2000	15	3	90000	67500	200	200
Tables (a) (h)	Seats	520	15	3	23400	17550	200	200
Casino FOH								
Spa(c) (g)	Person	300	1	10	3000	2250	200	200
Fitness(c)	Square Feet	3000	1	0.05	150	113	200	200
Retail(c)	Square Feet	2600	1	0.13	338	254	200	200
Food and Beverage								
Bar/Lounges (c)	Seats	235	1	20	4700	3525	200	200
Restaurants/Café (d)(i)	Seats	1110	3	18	59940	44955	880	250
Convention Center								
Convention Center (b) (d)	Seats	5000	1	5	25000	18750	200	200
Hotel								
Hotel Rooms (e)	Rooms	302	1	200	60400	45300	200	200
Employees								
Employees (f)	Employees	1870	1	20	37400	28050	200	200
				Flow Totals	**304328**	**228246**	**334**	**210**

a) Assumes five people at a time per table (104 tables).

b) Assumes that the convention center seats up to 5,000 people.

c) GPD usage from North Carolina Office of Administrative Hearings 15A NCAC 02T.0114 (http://reports.oah.state.nc.us/ncac.asp)

d) GPD usage from Uniform Plumbing Code

e) GPD based on casino wastewater treatment plant operator' prior experience

f) Assumes three 8-hour shifts

g) Assumed number of spa users during a peak day event

h) Assumed number of uses

i) Strength of wastewater form restaurants is based on pretreated wastewater study (Barnstable County Department of Health and Enivronment, 2013).

j) Average day flows assumed to be 75% of peak day flows

k) All wastewater quality strengths (except for restaurants) were based on an assumed 200 mg/L of BOD and TSS, which is typical for domestic wastewater.

DETAILED WASTEWATER PRODUCTION TABLE

Alternative E

Item	Unit	# of Units	Use Frequency	GPD/Unit	Peak Day Flow (GPD)	Average Day Flow (GPD) (j)	BOD	TSS
Casino								
Slot Machines (h)	Seats	1,900	15	3	85500	64125	200	200
Tables (a) (h)	Seats	520	15	3	23400	17550	200	200
Casino FOH								
Retail(c)	Square Feet	2,600	1	0.13	338	254	200	200
Food and Beverage								
Bar/Lounges (c)	Seats	235	1	20	4700	3525	200	200
Restaurants/Café (d)(i)	Seats	1,050	3	18	56700	42525	880	230
Employees								
Employees (f)	Employees	1,477	1	20	29540	22155	200	200
				Flow Totals	**200178**	**150134**	**393**	**208**

a) Assumes five people at a time per table (104 tables).
b) Note used
c) GPD usage from North Carolina Office of Administrative Hearings 15A NCAC 02T.0114 (http://reports.oah.state.nc.us/ncac.asp)
d) GPD usage from Uniform Plumbing Code
e) Not used
f) Assumes three 8-hour shifts
g) Not used
h) Assumed number of uses
i) Strength of wastewater form restaurants is based on pretreated wastewater study (Barnstable County Department of Health and Enivronment, 2013).
j) Average day flows assumed to be 75% of peak day flows
k) All wastewater quality strengths (except for restaurants) were based on an assumed 200 mg/L of BOD and TSS, which is typical for domestic wastewater.

DETAILED WASTEWATER PRODUCTION TABLE

Alternative F

Item	Unit	# of Units	Use Frequency	GPD/Unit	Peak Day Flow (GPD)	Average Day Flow (GPD) (j)	BOD	TSS
Casino								
Slot Machines (h)	Seats	2000	15	3	90000	67500	200	200
Tables (a) (h)	Seats	520	15	3	23400	17550	200	200
Casino FOH								
Spa(c) (g)	Person	300	1	10	3000	2250	200	200
Fitness(c)	Square Feet	3000	1	0.05	150	113	200	200
Retail(c)	Square Feet	2600	1	0.13	338	254	200	200
Food and Beverage								
Bar/Lounges (c)	Seats	235	1	20	4700	3525	200	200
Restaurants/Café (d)(i)	Seats	1110	3	18	59940	44955	880	230
Convention Center								
Convention Center (b) (d)	Seats	5000	1	5	25000	18750	200	200
Hotel								
Hotel Rooms (e)	Rooms	307	1	200	61400	46050	200	200
Employees								
Employees (f)	Employees	2031	1	20	40620	30465	200	200
				Flow Totals	**308548**	**231411**	**332**	**206**

a) Assumes five people at a time per table (104 tables).

b) Assumes that the convention center seats up to 5,000 people.

c) GPD usage from North Carolina Office of Administrative Hearings 15A NCAC 02T.0114 (http://reports.oah.state.nc.us/ncac.asp)

d) GPD usage from Uniform Plumbing Code

e) GPD based on casino wastewater treatment plant operator' prior experience

f) Assumes three 8-hour shifts

g) Assumed number of spa users during a peak day event

h) Assumed number of uses

i) Strength of wastewater form restaurants is based on pretreated wastewater study (Barnstable County Department of Health and Enivronment, 2013).

j) Average day flows assumed to be 75% of peak day flows

k) All wastewater quality strengths (except for restaurants) were based on an assumed 200 mg/L of BOD and TSS, which is typical for domestic wastewater.

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Wilton Rancheria Alternative A Surface Spray Disposal	PROJECT NO. 2014014 BY: KG CHK: GG Revised: 5/11/15

Applied Irrigation Area Zone 1 6.2 acres

Total Area Available for Irrigation Zone 1 40.0 acres

Month	Reference ET[a]	Turf Coeff[b]	Zone 1 Et[c]	Precip[d]	Irrigation Demand[e]		Operating Days per Month[f]	Percolation Capacity[g]		Assimilative Capacity[h]		Effluent Applied		Total Remaining Capacity	Days	FLOWS TO WWTP[i]	EFFLUENT APPLIED[j]	NET REMAINING[k]
	(in)		(in)	(in)	(in)	(Mgal)	(d)	(in)	(Mgal)	(in)	(Mgal)	(Mgal)	(in)	(Mgal)		(Mgal)	(Mgal)	(Mgal)
January	1.6	0.8	1.3	5.8	0.0	0.000	11	7.04	1.186	2.5	0.421	0.421	2.50	0.00	31	5.002	0.421	4.582
February	2.2	0.8	1.8	6.3	0.0	0.000	9	5.76	0.970	1.3	0.212	0.212	1.26	0.00	28	4.518	0.212	4.307
March	3.7	0.8	3.0	4.6	0.0	0.000	12	7.68	1.294	6.0	1.018	1.018	6.05	0.00	31	5.002	1.018	3.985
April	5.1	0.9	4.6	1.7	2.8	0.479	21	13.44	2.264	16.3	2.743	2.743	16.29	0.00	30	4.841	2.743	2.098
May	6.8	0.9	6.1	0.5	5.6	0.947	27	17.28	2.911	22.9	3.858	3.858	22.92	0.00	31	5.002	3.858	1.145
June	7.8	0.9	7.0	0.2	6.8	1.153	28	17.92	3.019	24.8	4.172	4.172	24.78	0.00	30	4.841	4.172	0.669
July	8.7	0.9	7.8	0.0	7.8	1.319	30	19.20	3.235	27.0	4.554	4.554	27.05	0.00	31	5.002	4.554	0.449
August	7.8	0.9	7.0	0.0	7.0	1.175	30	19.20	3.235	26.2	4.410	4.410	26.19	0.00	31	5.002	4.410	0.593
September	5.7	0.9	5.1	0.3	4.8	0.813	27	17.28	2.911	22.1	3.724	3.724	22.12	0.00	30	4.841	3.724	1.117
October	4.0	0.9	3.6	0.9	2.7	0.451	25	16.00	2.695	18.7	3.147	2.900	17.23	0.25	31	5.002	2.900	2.102
November	2.1	0.8	1.7	2.9	0.0	0.000	16	10.24	1.725	9.0	1.512	1.512	8.98	0.00	30	4.841	1.512	3.329
December	1.6	0.8	1.3	4.1	0.0	0.000	16	10.24	1.725	7.4	1.251	1.251	7.43	0.00	31	5.002	1.251	3.752
Total	**57.1**		**50.3**	**27.4**	**37.6**	**6.3**	**252.0**	**161.3**	**27.2**	**184.1**	**31.0**	**30.8**	**182.8**	**0.2**	**365**	**58.9**	**30.8**	**28.1**

(a) Average monthly reference evapotranspiration rates, see Climate Data Worksheet.

(b) Kc coefficients for pasture from Table 5-1, "Irrigation with Reclaimed Municipal Wastewater-A Guidance Manual"- California State Water Resources Control Board, July 1984 (San Joaquin Valley).

(c) ET=ETo x Kc. A weighted value is determined on the basis of the available irrigated acreage of turf.

(d) Precipitation, 10-year rainfall, from National Climatic Data Center.

(e) Irrigation Demand = ET-Precipitation, inches. A weighted value is determined on the basis of the available irrigated acreage of turf.

(f) Number of operating days per month based on number of days of rainfall during a 10-year rainfall, allowing 2 days of no irrigation following any rainfall event

(g) Design percolation rate is a maximum of 0.4 gpd/sq ft for the number of operating day per month.

(h) Assimilative capacity is the sum of Zone ETc and percolation capacity minus precipitation

(i) Wastewater flows are based on average day wastewater generation minus toilet flushing demands

(j) Effluent applied refers to surface spray discharge.

(k) Net remaining effluent is the flows to the WWTP minus effluent applied.

Percolation Rate (g) 0.64 in/day

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Wilton Rancheria Alternative A Subsurface Drip Disposal	PROJECT NO. 2014014 BY: KG CHK: GG Revised: 5/11/15

Applied Irrigation Area Zone 2 16.6 acres

Total Area Available for Irrigation Zone 2 40.0 acres

Month	Precip[a]	Operating Days per Month	Percolation Capacity[b]		Assimilative Capacity[c]		Effluent Applied		Total Remaining Capacity[e]	Days	FLOWS TO WWTP[d]	EFFLUENT APPLIED to Subsurface Field[f]	EFFLUENT APPLIED to Spray Field[g]
	(in)	(d)	(in)	(Mgal)	(in)	(Mgal)	(Mgal)	(in)	(Mgal)		(Mgal)	(Mgal)	(Mgal)
January	5.8	31	19.84	8.970	14.0	6.337	4.582	10.14	1.76	31	5.002	4.582	0.421
February	6.3	28	17.92	8.102	11.7	5.270	4.307	9.53	0.96	28	4.518	4.307	0.212
March	4.6	31	19.84	8.970	15.2	6.891	3.985	8.82	2.91	31	5.002	3.985	1.018
April	1.7	30	19.20	8.681	17.5	7.891	2.098	4.64	5.79	30	4.841	2.098	2.743
May	0.5	31	19.84	8.970	19.3	8.745	1.145	2.53	7.60	31	5.002	1.145	3.858
June	0.2	30	19.20	8.681	19.0	8.601	0.669	1.48	7.93	30	4.841	0.669	4.172
July	0.0	31	19.84	8.970	19.8	8.970	0.449	0.99	8.52	31	5.002	0.449	4.554
August	0.0	31	19.84	8.970	19.8	8.950	0.593	1.31	8.36	31	5.002	0.593	4.410
September	0.3	30	19.20	8.681	18.9	8.545	1.117	2.47	7.43	30	4.841	1.117	3.724
October	0.9	31	19.84	8.970	18.9	8.554	2.102	4.65	6.45	31	5.002	2.102	2.900
November	2.9	30	19.20	8.681	16.3	7.349	3.329	7.37	4.02	30	4.841	3.329	1.512
December	4.1	31	19.84	8.970	15.7	7.118	3.752	8.30	3.37	31	5.002	3.752	1.251
Total	**27.4**	**365.0**	**233.6**	**105.6**	**206.2**	**93.2**	**28.1**	**62.3**	**65.1**	**365**	**58.9**	**28.1**	**30.8**

(a) Precipitation, 10-year rainfall, from National Climatic Data Center.

(b) Design percolation rate is a maximum of 0.4 gpd/sq ft for the number of operating day per month.

(c) Assimilative capacity is the percolation capacity minus precipitation

(d) Wastewater flows are based off average day production minus toilet flushing demands

(e) Remaining capacity is greater than or equal to effluent applied for extra saftey factor

(f) Effluent applied refers to surface spray discharge.

(g) Net remaining effluent is the flows to the WWTP minus effluent applied.

Percolation Rate (b) 0.64 in/day

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Wilton Rancheria Alternative B Surface Spray Disposal	PROJECT NO. 2014014 BY: KG CHK: GG Revised: 5/11/15

Applied Irrigation Area Zone 1 6.2 acres

Total Area Available for Irrigation Zone 1 40.0 acres

Month	Reference ET[a]	Turf Coeff[b]	Zone 1 Et[c]	Precip[d]	Irrigation Demand[e]		Operating Days per Month[f]	Percolation Capacity[g]		Assimilative Capacity[h]		Effluent Applied		Total Remaining Capacity	Days	FLOWS TO WWTP[i]	EFFLUENT APPLIED[j]	NET REMAINING[k]
	(in)		(in)	(in)	(in)	(Mgal)	(d)	(in)	(Mgal)	(in)	(Mgal)	(Mgal)	(in)	(Mgal)		(Mgal)	(Mgal)	(Mgal)
January	1.6	0.8	1.3	5.8	0.0	0.000	11	7.04	1.186	2.5	0.421	0.421	2.50	0.00	31	3.321	0.421	2.900
February	2.2	0.8	1.8	6.3	0.0	0.000	9	5.76	0.970	1.3	0.212	0.212	1.26	0.00	28	2.999	0.212	2.788
March	3.7	0.8	3.0	4.6	0.0	0.000	12	7.68	1.294	6.0	1.018	1.018	6.05	0.00	31	3.321	1.018	2.303
April	5.1	0.9	4.6	1.7	2.8	0.479	21	13.44	2.264	16.3	2.743	2.700	16.04	0.04	30	3.214	2.700	0.514
May	6.8	0.9	6.1	0.5	5.6	0.947	27	17.28	2.911	22.9	3.858	3.321	19.73	0.54	31	3.321	3.321	0.000
June	7.8	0.9	7.0	0.2	6.8	1.153	28	17.92	3.019	24.8	4.172	3.214	19.09	0.96	30	3.214	3.214	0.000
July	8.7	0.9	7.8	0.0	7.8	1.319	30	19.20	3.235	27.0	4.554	3.321	19.73	1.23	31	3.321	3.321	0.000
August	7.8	0.9	7.0	0.0	7.0	1.175	30	19.20	3.235	26.2	4.410	3.321	19.73	1.09	31	3.321	3.321	0.000
September	5.7	0.9	5.1	0.3	4.8	0.813	27	17.28	2.911	22.1	3.724	3.214	19.09	0.51	30	3.214	3.214	0.000
October	4.0	0.9	3.6	0.9	2.7	0.451	25	16.00	2.695	18.7	3.147	2.200	13.07	0.95	31	3.321	2.200	1.121
November	2.1	0.8	1.7	2.9	0.0	0.000	16	10.24	1.725	9.0	1.512	1.512	8.98	0.00	30	3.214	1.512	1.702
December	1.6	0.8	1.3	4.1	0.0	0.000	16	10.24	1.725	7.4	1.251	1.251	7.43	0.00	31	3.321	1.251	2.070
Total	**57.1**		**50.3**	**27.4**	**37.6**	**6.3**	**252.0**	**161.3**	**27.2**	**184.1**	**31.0**	**25.7**	**152.7**	**5.3**	**365**	**39.1**	**25.7**	**13.4**

(a) Average monthly reference evapotranspiration rates, see Climate Data Worksheet.

(b) Kc coefficients for pasture from Table 5-1, "Irrigation with Reclaimed Municipal Wastewater-A Guidance Manual"- California State Water Resources Control Board, July 1984 (San Joaquin Valley).

(c) ET=ETo x Kc. A weighted value is determined on the basis of the available irrigated acreage of turf.

(d) Precipitation, 10-year rainfall, from National Climatic Data Center.

(e) Irrigation Demand = ET-Precipitation, inches. A weighted value is determined on the basis of the available irrigated acreage of turf.

(f) Number of operating days per month based on number of days of rainfall during a 10-year rainfall, allowing 2 days of no irrigation following any rainfall event

(g) Design percolation rate is a maximum of 0.4 gpd/sq ft for the number of operating day per month.

(h) Assimilative capacity is the sum of Zone ETc and percolation capacity minus precipitation

(i) Wastewater flows are based on average day wastewater generation minus toilet flushing demands

(j) Effluent applied refers to surface spray discharge.

(k) Net remaining effluent is the flows to the WWTP minus effluent applied.

Percolation Rate (g) 0.64 in/day

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Wilton Rancheria Alternative B Subsurface Drip Disposal	PROJECT NO. 2014014 BY: KG CHK: GG Revised: 5/11/15

Applied Irrigation Area Zone 2 11.0 acres

Total Area Available for Irrigation Zone 2 40.0 acres

Month	Precip[a]	Operating Days per Month	Percolation Capacity[b]		Assimilative Capacity[c]		Effluent Applied		Total Remaining Capacity	Days	FLOWS TO WWTP	EFFLUENT APPLIED to Subsurface Field[f]	EFFLUENT APPLIED to Spray Field[g]	NET REMAINING
	(in)	(d)	(in)	(Mgal)	(in)	(Mgal)	(Mgal)	(in)	(Mgal)		(Mgal)	(Mgal)	(Mgal)	(Mgal)
January	5.8	31	19.84	5.930	14.0	4.189	2.900	9.71	1.29	31	3.321	2.900	0.421	0.000
February	6.3	28	17.92	5.356	11.7	3.484	2.788	9.33	0.70	28	2.999	2.788	0.212	0.000
March	4.6	31	19.84	5.930	15.2	4.555	2.303	7.71	2.25	31	3.321	2.303	1.018	0.000
April	1.7	30	19.20	5.739	17.5	5.216	0.514	1.72	4.70	30	3.214	0.514	2.700	0.000
May	0.5	31	19.84	5.930	19.3	5.781	0.000	0.00	5.78	31	3.321	0.000	3.321	0.000
June	0.2	30	19.20	5.739	19.0	5.686	0.000	0.00	5.69	30	3.214	0.000	3.214	0.000
July	0.0	31	19.84	5.930	19.8	5.930	0.000	0.00	5.93	31	3.321	0.000	3.321	0.000
August	0.0	31	19.84	5.930	19.8	5.916	0.000	0.00	5.92	31	3.321	0.000	3.321	0.000
September	0.3	30	19.20	5.739	18.9	5.649	0.000	0.00	5.65	30	3.214	0.000	3.214	0.000
October	0.9	31	19.84	5.930	18.9	5.655	1.121	3.75	4.53	31	3.321	1.121	2.200	0.000
November	2.9	30	19.20	5.739	16.3	4.858	1.702	5.70	3.16	30	3.214	1.702	1.512	0.000
December	4.1	31	19.84	5.930	15.7	4.706	2.070	6.93	2.64	31	3.321	2.070	1.251	0.000
Total	**27.4**	**365.0**	**233.6**	**69.8**	**206.2**	**61.6**	**13.4**	**44.9**	**48.2**	**365**	**39.1**	**13.4**	**25.7**	**0.0**

(a) Precipitation, 10-year rainfall, from National Climatic Data Center.

(b) Design percolation rate is a maximum of 0.4 gpd/sq ft for the number of operating day per month.

(c) Assimilative capacity is the percolation capacity minus precipitation

(d) Wastewater flows are based off average day production minus toilet flushing demands

(e) Remaining capacity is greater than or equal to effluent applied for extra saftey factor

(f) Effluent applied refers to surface spray discharge.

(g) Net remaining effluent is the flows to the WWTP minus effluent applied.

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Wilton Rancheria Alternative C Surface Spray Disposal	PROJECT NO. 2014014 BY: KG CHK: GG Revised: 5/11/15

Applied Irrigation Area Zone 1 6.2 acres

Total Area Available for Irrigation Zone 1 40.0 acres

Month	Reference ET[a]	Turf Coeff[b]	Zone 1 Etc	Precip[d]	Irrigation Demand[e]		Operating Days per Month[f]	Percolation Capacity[g]		Assimilative Capacity[h]		Effluent Applied		Total Remaining Capacity	Days	FLOWS TO WWTP[i]	EFFLUENT APPLIED[j]	NET REMAINING[k]
	(in)		(in)	(in)	(in)	(Mgal)	(d)	(in)	(Mgal)	(in)	(Mgal)	(Mgal)	(in)	(Mgal)		(Mgal)	(Mgal)	(Mgal)
January	0.9	0.8	0.7	5.8	0.0	0.000	11	7.04	1.186	1.9	0.324	0.324	1.92	0.00	31	2.242	0.324	1.919
February	1.2	0.8	0.9	6.3	0.0	0.000	9	5.76	0.970	0.4	0.071	0.071	0.42	0.00	28	2.025	0.071	1.954
March	2.6	0.8	2.1	4.6	0.0	0.000	12	7.68	1.294	5.2	0.869	0.720	4.28	0.15	31	2.242	0.720	1.522
April	4.9	0.9	4.4	1.7	2.7	0.450	21	13.44	2.264	16.1	2.714	1.600	9.50	1.11	30	2.170	1.600	0.570
May	6.1	0.9	5.5	0.5	5.0	0.844	27	17.28	2.911	22.3	3.755	2.242	13.32	1.51	31	2.242	2.242	0.000
June	6.6	0.9	5.9	0.2	5.7	0.968	28	17.92	3.019	23.7	3.987	2.170	12.89	1.82	30	2.170	2.170	0.000
July	7.0	0.9	6.3	0.0	6.3	1.057	30	19.20	3.235	25.5	4.291	2.242	13.32	2.05	31	2.242	2.242	0.000
August	5.7	0.9	5.2	0.0	5.1	0.861	30	19.20	3.235	24.3	4.096	2.242	13.32	1.85	31	2.242	2.242	0.000
September	4.4	0.9	4.0	0.3	3.6	0.615	27	17.28	2.911	20.9	3.526	2.170	12.89	1.36	30	2.170	2.170	0.000
October	3.4	0.9	3.0	0.9	2.1	0.353	25	16.00	2.695	18.1	3.048	1.300	7.72	1.75	31	2.242	1.300	0.942
November	1.1	0.8	0.9	2.9	0.0	0.000	16	10.24	1.725	8.2	1.382	1.300	7.72	0.08	30	2.170	1.300	0.870
December	1.5	0.8	1.2	4.1	0.0	0.000	16	10.24	1.725	7.3	1.237	1.237	7.35	0.00	31	2.242	1.237	1.005
Total	**45.3**		**40.1**	**27.4**	**30.6**	**5.1**	**252.0**	**161.3**	**27.2**	**173.9**	**29.3**	**17.6**	**104.7**	**11.7**	**365**	**26.4**	**17.6**	**8.8**

(a) Average monthly reference evapotranspiration rates, see Climate Data Worksheet.

(b) Kc coefficients for pasture from Table 5-1, "Irrigation with Reclaimed Municipal Wastewater-A Guidance Manual"- California State Water Resources Control Board, July 1984 (San Joaquin Valley).

(c) ET=ETo x Kc. A weighted value is determined on the basis of the available irrigated acreage of turf.

(d) Precipitation, 10-year rainfall, from National Climatic Data Center.

(e) Irrigation Demand = ET-Precipitation, inches. A weighted value is determined on the basis of the available irrigated acreage of turf.

(f) Number of operating days per month based on number of days of rainfall during a 10-year rainfall, allowing 2 days of no irrigation following any rainfall event

(g) Design percolation rate is a maximum of 0.4 gpd/sq ft for the number of operating day per month.

(h) Assimilative capacity is the sum of Zone ETc and percolation capacity minus precipitation

(i) Wastewater flows are based on average day wastewater generation minus toilet flushing demands

(j) Effluent applied refers to surface spray discharge.

(k) Net remaining effluent is the flows to the WWTP minus effluent applied.

Percolation Rate (g) 0.64 in/day

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Wilton Rancheria Alternative A Subsurface Drip Disposal Only	PROJECT NO. 2014014 BY: KG CHK: GG Revised: 5/11/15

Applied Irrigation Area Zone 1 22.1 acres

Total Area Available for Irrigation Zone 1 80.0 acres

Month	Precip[a]	Percolation Capacity[b]		Assimilative Capacity[c]		Effluent Applied		Total Remaining Capacity[e]	Days	FLOWS TO WWTP[d]	EFFLUENT APPLIED to Subsurface Field
	(in)	(in)	(Mgal)	(in)	(Mgal)	(Mgal)	(in)	(Mgal)		(Mgal)	(Mgal)
January	5.8	19.84	11.930	14.0	8.428	5.002	8.33	3.43	31	5.002	5.002
February	6.3	17.92	10.775	11.7	7.009	4.518	7.52	2.49	28	4.518	4.518
March	4.6	19.84	11.930	15.2	9.164	5.002	8.33	4.16	31	5.002	5.002
April	1.7	19.20	11.545	17.5	10.494	4.841	8.06	5.65	30	4.841	4.841
May	0.5	19.84	11.930	19.3	11.630	5.002	8.33	6.63	31	5.002	5.002
June	0.2	19.20	11.545	19.0	11.439	4.841	8.06	6.60	30	4.841	4.841
July	0.0	19.84	11.930	19.8	11.930	5.002	8.33	6.93	31	5.002	5.002
August	0.0	19.84	11.930	19.8	11.903	5.002	8.33	6.90	31	5.002	5.002
September	0.3	19.20	11.545	18.9	11.364	4.841	8.06	6.52	30	4.841	4.841
October	0.9	19.84	11.930	18.9	11.376	5.002	8.33	6.37	31	5.002	5.002
November	2.9	19.20	11.545	16.3	9.774	4.841	8.06	4.93	30	4.841	4.841
December	4.1	19.84	11.930	15.7	9.467	5.002	8.33	4.46	31	5.002	5.002
Total	**27.4**	**233.6**	**140.5**	**206.2**	**124.0**	**58.9**	**98.0**	**65.1**	**365**	**58.9**	**58.9**

(a) Precipitation, 10-year rainfall, from National Climatic Data Center.

(b) Design percolation rate is a maximum of 0.4 gpd/sq ft for the number of operating day per month.

(c) Assimilative capacity is the percolation capacity minus precipitation

(d) Wastewater flows are based off average day production minus toilet flushing demands

(e) Remaining capacity is greater than or equal to effluent applied for extra saftey factor

Adjusted Percolation Rate 0.64 in/day

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Wilton Rancheria Alternative B Subsurface Drip Disposal Only	PROJECT NO. 2014014 BY: KG CHK: GG Revised: 5/11/15

Applied Irrigation Area Zone 1 15.0 acres

Total Area Available for Irrigation Zone 1 80.0 acres

Month	Precip[a]	Percolation Capacity[b]		Assimilative Capacity[c]		Effluent Applied		Total Remaining Capacity[e]	Days	FLOWS TO WWTP[d]	EFFLUENT APPLIED to Subsurface Field
	(in)	(in)	(Mgal)	(in)	(Mgal)	(Mgal)	(in)	(Mgal)		(Mgal)	(Mgal)
January	5.8	19.84	8.086	14.0	5.713	3.321	8.15	2.39	31	3.321	3.321
February	6.3	17.92	7.304	11.7	4.751	2.999	7.36	1.75	28	2.999	2.999
March	4.6	19.84	8.086	15.2	6.212	3.321	8.15	2.89	31	3.321	3.321
April	1.7	19.20	7.825	17.5	7.113	3.214	7.89	3.90	30	3.214	3.214
May	0.5	19.84	8.086	19.3	7.883	3.321	8.15	4.56	31	3.321	3.321
June	0.2	19.20	7.825	19.0	7.754	3.214	7.89	4.54	30	3.214	3.214
July	0.0	19.84	8.086	19.8	8.086	3.321	8.15	4.77	31	3.321	3.321
August	0.0	19.84	8.086	19.8	8.068	3.321	8.15	4.75	31	3.321	3.321
September	0.3	19.20	7.825	18.9	7.703	3.214	7.89	4.49	30	3.214	3.214
October	0.9	19.84	8.086	18.9	7.711	3.321	8.15	4.39	31	3.321	3.321
November	2.9	19.20	7.825	16.3	6.625	3.214	7.89	3.41	30	3.214	3.214
December	4.1	19.84	8.086	15.7	6.417	3.321	8.15	3.10	31	3.321	3.321
Total	**27.4**	**233.6**	**95.2**	**206.2**	**84.0**	**39.1**	**96.0**	**44.9**	**365**	**39.1**	**39.1**

(a) Precipitation, 10-year rainfall, from National Climatic Data Center.
(b) Design percolation rate is a maximum of 0.4 gpd/sq ft for the number of operating day per month.
(c) Assimilative capacity is the percolation capacity minus precipitation
(d) Wastewater flows are based off average day production minus toilet flushing demands
(e) Remaining capacity is greater than or equal to effluent applied for extra saftey factor

Adjusted Percolation Rate 0.64 in/day

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Wilton Rancheria Alternative C Subsurface Drip Disposal	PROJECT NO. 2014 BY: KG CHK: GG Revised: 5/11/15

Applied Irrigation Area Zone 1 9.5 acres

Total Area Available for Irrigation Zone 1 80.0 acres

Month	Precip[a]	Percolation Capacity[b]		Assimilative Capacity[c]		Effluent Applied		Total Remaining Capacity[e]	Days	FLOWS TO WWTP[d]	EFFLUENT APPLIED to Subsurface Field
	(in)	(in)	(Mgal)	(in)	(Mgal)	(Mgal)	(in)	(Mgal)		(Mgal)	(Mgal)
January	5.8	19.84	5.121	14.0	3.618	2.242	8.69	1.38	31	2.242	2.242
February	6.3	17.92	4.626	11.7	3.009	2.025	7.85	0.98	28	2.025	2.025
March	4.6	19.84	5.121	15.2	3.934	2.242	8.69	1.69	31	2.242	2.242
April	1.7	19.20	4.956	17.5	4.505	2.170	8.41	2.34	30	2.170	2.170
May	0.5	19.84	5.121	19.3	4.992	2.242	8.69	2.75	31	2.242	2.242
June	0.2	19.20	4.956	19.0	4.911	2.170	8.41	2.74	30	2.170	2.170
July	0.0	19.84	5.121	19.8	5.121	2.242	8.69	2.88	31	2.242	2.242
August	0.0	19.84	5.121	19.8	5.110	2.242	8.69	2.87	31	2.242	2.242
September	0.3	19.20	4.956	18.9	4.878	2.170	8.41	2.71	30	2.170	2.170
October	0.9	19.84	5.121	18.9	4.884	2.242	8.69	2.64	31	2.242	2.242
November	2.9	19.20	4.956	16.3	4.196	2.170	8.41	2.03	30	2.170	2.170
December	4.1	19.84	5.121	15.7	4.064	2.242	8.69	1.82	31	2.242	2.242
Total	**27.4**	**233.6**	**60.3**	**206.2**	**53.2**	**26.4**	**102.3**	**26.8**	**365**	**26.4**	**26.4**

(a) Precipitation, 10-year rainfall, from National Climatic Data Center.
(b) Design percolation rate is a maximum of 0.4 gpd/sq ft for the number of operating day per month.
(c) Assimilative capacity is the percolation capacity minus precipitation
(d) Wastewater flows are based off average day production minus toilet flushing demands
(e) Remaining capacity is greater than or equal to effluent applied for extra saftey factor

Adjusted Percolation Rate 0.64 in/day

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Wilton Rancheria Alternative D Subsurface Drip Disposal Only	PROJECT NO. 2014014 BY: KG CHK: GG Revised: 5/11/15

Applied Irrigation Area Zone 1 3.1 acres

Total Area Available for Irrigation Zone 1 3.1 acres

Month	Precip[a]	Percolation Capacity[b]		Assimilative Capacity[c]		Effluent Applied		Total Remaining Capacity[e]	Days	FLOWS TO WWTP[d]	EFFLUENT APPLIED to Subsurface Field
	(in)	(in)	(Mgal)	(in)	(Mgal)	(Mgal)	(in)	(Mgal)		(Mgal)	(Mgal)
January	5.8	19.84	1.650	14.0	1.165	4.952	59.59	-3.79	31	4.952	4.952
February	6.3	17.92	1.490	11.7	0.969	4.472	53.83	-3.50	28	4.472	4.472
March	4.6	19.84	1.650	15.2	1.267	4.952	59.59	-3.68	31	4.952	4.952
April	1.7	19.20	1.596	17.5	1.451	4.792	57.67	-3.34	30	4.792	4.792
May	0.5	19.84	1.650	19.3	1.608	4.952	59.59	-3.34	31	4.952	4.952
June	0.2	19.20	1.596	19.0	1.582	4.792	57.67	-3.21	30	4.792	4.792
July	0.0	19.84	1.650	19.8	1.650	4.952	59.59	-3.30	31	4.952	4.952
August	0.0	19.84	1.650	19.8	1.646	4.952	59.59	-3.31	31	4.952	4.952
September	0.3	19.20	1.596	18.9	1.571	4.792	57.67	-3.22	30	4.792	4.792
October	0.9	19.84	1.650	18.9	1.573	4.952	59.59	-3.38	31	4.952	4.952
November	2.9	19.20	1.596	16.3	1.351	4.792	57.67	-3.44	30	4.792	4.792
December	4.1	19.84	1.650	15.7	1.309	4.952	59.59	-3.64	31	4.952	4.952
Total	**27.4**	**233.6**	**19.4**	**206.2**	**17.1**	**58.3**	**701.7**	**-41.2**	**365**	**58.3**	**58.3**

(a) Precipitation, 10-year rainfall, from National Climatic Data Center.

(b) Design percolation rate is a maximum of 0.4 gpd/sq ft for the number of operating day per month.

(c) Assimilative capacity is the percolation capacity minus precipitation

(d) Wastewater flows are based off average day production minus toilet flushing demands

(e) A negative total remaing capacity means that there is insufficient disposal area

Adjusted Percolation Rate 0.64 in/day

SUMMIT ENGINEERING, INC. Consulting Civil Engineers	Wilton Rancheria Alternative E Subsurface Drip Disposal Only	PROJECT NO. 2014014 BY: KG CHK: GG Revised: 5/11/15

Applied Irrigation Area Zone 1 8.0 acres

Total Area Available for Irrigation Zone 1 8.0 acres

Month	Precip[a]	Percolation Capacity[b]		Assimilative Capacity[c]		Effluent Applied		Total Remaining Capacity[e]	Days	FLOWS TO WWTP[d]	EFFLUENT APPLIED to Subsurface Field
	(in)	(in)	(Mgal)	(in)	(Mgal)	(Mgal)	(in)	(Mgal)		(Mgal)	(Mgal)
January	5.8	19.84	4.313	14.0	3.047	3.261	15.01	-0.21	31	3.261	3.261
February	6.3	17.92	3.895	11.7	2.534	2.946	13.56	-0.41	28	2.946	2.946
March	4.6	19.84	4.313	15.2	3.313	3.261	15.01	0.05	31	3.261	3.261
April	1.7	19.20	4.174	17.5	3.794	3.156	14.53	0.64	30	3.156	3.156
May	0.5	19.84	4.313	19.3	4.204	3.261	15.01	0.94	31	3.261	3.261
June	0.2	19.20	4.174	19.0	4.135	3.156	14.53	0.98	30	3.156	3.156
July	0.0	19.84	4.313	19.8	4.313	3.261	15.01	1.05	31	3.261	3.261
August	0.0	19.84	4.313	19.8	4.303	3.261	15.01	1.04	31	3.261	3.261
September	0.3	19.20	4.174	18.9	4.108	3.156	14.53	0.95	30	3.156	3.156
October	0.9	19.84	4.313	18.9	4.112	3.261	15.01	0.85	31	3.261	3.261
November	2.9	19.20	4.174	16.3	3.533	3.156	14.53	0.38	30	3.156	3.156
December	4.1	19.84	4.313	15.7	3.422	3.261	15.01	0.16	31	3.261	3.261
Total	**27.4**	**233.6**	**50.8**	**206.2**	**44.8**	**38.4**	**176.8**	**6.4**	**365**	**38.4**	**38.4**

(a) Precipitation, 10-year rainfall, from National Climatic Data Center.

(b) Design percolation rate is a maximum of 0.4 gpd/sq ft for the number of operating day per month.

(c) Assimilative capacity is the percolation capacity minus precipitation

(d) Wastewater flows are based off average day production minus toilet flushing demands

(e) A negative total remaing capacity means that there is insufficient disposal area

Adjusted Percolation Rate 0.64 in/day

APPENDIX C: WASTEWATER MANAGEMENT REQUIREMENTS

RECYCLED WATER REUSE REGULATIONS (TITLE 22)
SACRAMENTO COUNTY SETBACK REQUIREMENTS
SASD ORDINANCE SECTION 8.1

Recycled Water Uses Allowed[1] in California

Use of Recycled Water	Treatment Level			
	Disinfected Tertiary Recycled Water	Disinfected Secondary – 2.2 Recycled Water	Disinfected Secondary – 23 Recycled Water	Undisinfected Secondary Recycled Water
Irrigation of:				
Food crops where recycled water contacts the edible portion of the crop, including all root crops	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Parks and playgrounds	**Allowed**	Not Allowed	Not Allowed	Not Allowed
School yards	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Residential landscaping	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Unrestricted-access golf courses	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Any other irrigation uses not prohibited by other provisions of the California Code of Regulations	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Food crops, surface-irrigated, above-ground edible portion, and not contacted by recycled water	**Allowed**	**Allowed**	Not Allowed	Not Allowed
Cemeteries	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Freeway landscaping	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Restricted-access golf courses	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Ornamental nursery stock and sod farms with unrestricted public access	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Pasture for milk animals for human consumption	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Non-edible vegetation with access control to prevent use as a park, playground or school yard	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Orchards with no contact between edible portion and recycled water	**Allowed**	**Allowed**	Not Allowed[2]	Not Allowed[2]
Vineyards with no contact between edible portion and recycled water	**Allowed**	**Allowed**	Not Allowed[2]	Not Allowed[2]
Non food-bearing trees, including Christmas trees not irrigated less than 14 days before harvest	**Allowed**	**Allowed**	**Allowed**	**Allowed**
Fodder and fiber crops and pasture for animals not producing milk for human consumption	**Allowed**	**Allowed**	**Allowed**	**Allowed**
Seed crops not eaten by humans	**Allowed**	**Allowed**	**Allowed**	**Allowed**
Food crops undergoing commercial pathogen-destroying processing before consumption by humans	**Allowed**	**Allowed**	**Allowed**	**Allowed**
Ornamental nursery stock, sod farms not irrigated less than 14 day before harvest	**Allowed**	**Allowed**	**Allowed**	**Allowed**
Supply for impoundment:				
Non-restricted recreational impoundments, with supplemental monitoring for pathogenic organisms	**Allowed**[3]	Not Allowed	Not Allowed	Not Allowed
Restricted recreational impoundments and publicly-accessible fish hatcheries	**Allowed**	**Allowed**	Not Allowed	Not Allowed
Landscape impoundments without decorative fountains	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Supply for cooling or air conditioning:				
Industrial or commercial cooling or air conditioning involving cooling tower, evaporative condenser, or spraying that creates a mist	**Allowed**[4]	Not Allowed	Not Allowed	Not Allowed
Industrial or commercial cooling or air conditioning not involving cooling tower, evaporative condenser, or spraying that creates a mist	**Allowed**	**Allowed**	**Allowed**	Not Allowed

Recycled Water Uses Allowed[1] in California
(continued)

Use of Recycled Water	Treatment Level: Disinfected Tertiary Recycled Water	Disinfected Secondary – 2.2 Recycled Water	Disinfected Secondary – 23 Recycled Water	Undisinfected Secondary Recycled Water
Other uses:				
Groundwater recharge	**Allowed** under special case-by-case permits by RWQCBs[5]			
Flushing toilets and urinals	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Priming drain traps	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Industrial process water that may contact workers	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Structural fire fighting	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Decorative fountains	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Commercial laundries	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Consolidation of backfill material around potable water pipelines	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Artificial snow making for commercial outdoor uses	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Commercial car washes, not heating the water, excluding the general public from washing process	**Allowed**	Not Allowed	Not Allowed	Not Allowed
Industrial process water that will not come into contact with workers	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Industrial boiler feedwater	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Non-structural fire fighting	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Backfill consolidation around non-potable piping	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Soil compaction	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Mixing concrete	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Dust control on roads and streets	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Cleaning roads, sidewalks, and outdoor work areas	**Allowed**	**Allowed**	**Allowed**	Not Allowed
Flushing sanitary sewers	**Allowed**	**Allowed**	**Allowed**	**Allowed**

This summary is prepared from the December 2, 2000-adopted Title 22 Water Recycling Criteria and supersedes all earlier versions. Prepared by Bahman Sheikh and edited by EBMUD Office of Water Recycling, who acknowledge this is a summary and not the formal version of the regulations referenced above.

[1] Refer to the full text of the December 2, 2000 version of Title 22: California Code of Regulations, Chapter 3 Water Recycling Criteria. This chart is only an informal summary of the uses allowed in this version, with the exception of orchards and vineyards noted as "Not Allowed[2]" on page 1 and explained below.

[2] Per California Department of Public Health letter of January 8, 2003 to California Regional Water Quality Control Boards.

[3] Allowed with "conventional tertiary treatment." Additional monitoring for two years or more is necessary with direct filtration.

[4] Drift eliminators and/or biocides are required if public or employees can be exposed to mist.

[5] Refer to Groundwater Recharge Guidelines, available from the California Department of Public Health.

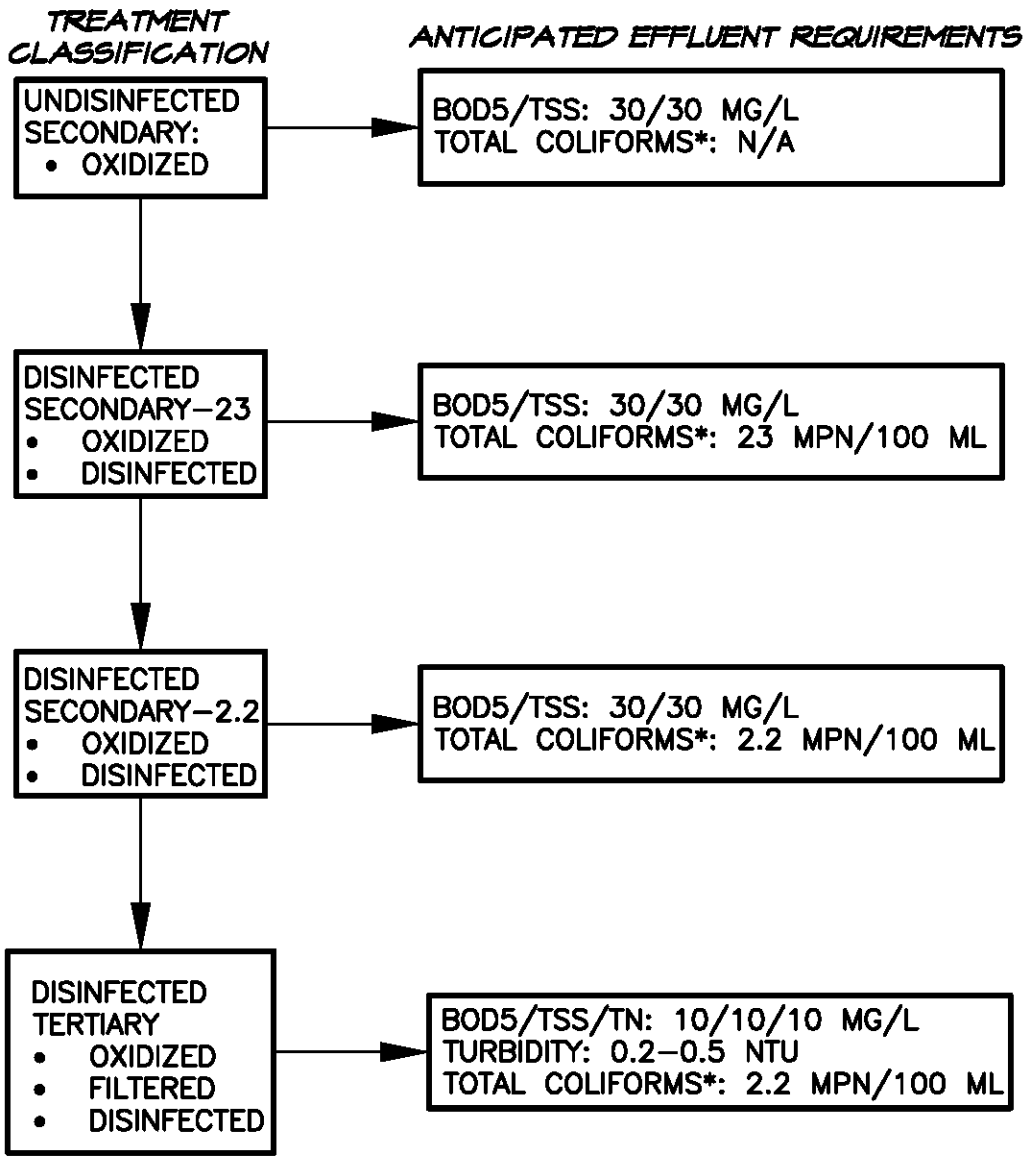
2013

SUMMIT

RECYLED WATER TREATMENT AND USE FLOW CHART

TITLE 22 CRITERIA

PROJECT NO. N/A
DATE 02-08-2014
SHT NO 1 OF 1
BY CN CHK AS



*7-DAY AVERAGE

PLOTTED ON: 2/5/2014 9:09 AM
C:\USERS\CHRISTINA\DESKTOP\RW PRESENTATION\RW TREATMENT USE CHART.DWG

Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403 • 707-527-0775 • www.summit-sr.com

Guidelines for Recycling Water
Title 22

Water Treatment Level	Oxidized	Disinfection Ozone/Peroxide P.17 Pasteurization P.18 UV P.19	Filtered	MPN Requirements			Turbidity	Other Requirements	Uses	
				For 7 Day Period	For 30 Day Period	Ultimate limit			Irrigation	Other
Undisinfected	×								1. Orchards (no contact with edible portions) 2. Vineyards (no contact) 3. Non food bearing trees** 4. Fodder/Fiber crop/pasture for animals not producing milk for human consumption 5. Seed crops not eaten be humans 6. Food crops that undergo pathogen destroying before human consumption 7. Ornamental nursery stock and sod farms**	1. Flushing sanitary sewers
Filtered	×		(a) Coagulated and passed through soil or filter media(p.43 & P.8) at 5gpm/ft^2 or 2gpm/ft^2 for auto backwash filters (b) filtration or reverse osmosis (p.43)				(a) Ave of 2 NTU for 24 hrs, allowed 15 min of 5 NTU but never above 10 NTU (b) 0.2 NTU ave and <0.5 NTU			
Disinfected Tertiary		Chlorine process with CT of 450mgpm/L and modal time of 90 min	×	2.2/100ml	Allowed one sample >23/100ml	<240/100ml	Ave of 2 NTU for 24 hrs, allowed 15 min of 5 NTU but never above 10 NTU	(a) Turbidity constantly measured (b) Capable of auto chem addition or diversion	1. Food Crops 2. Parks and playgrounds 3. School yards 4. Residential Landscaping 5. Unrestricted golf courses 6. Other irrigation (check CA code) 7. Nonrestricted recreational impoundment's	1. Flushing Toilets 2. Priming drain taps 3. Industrial pw that may come into contact with workers 4. Structural fire fighting 5.Decorative fountains 6. Commercial laundries 7. Consolidation of backfill around potable water pipelines 8. Artificial snow making 9. Commercial car washes
		A process of disinfecting/filtering (p.43) that inactivates or removes 99.999% plaque forming units of F-specific bacteriophage MS2 or polio virus*								
Disinfected Secondary-2.2	×	×		2.2/100ml	Allowed one sample >23/100ml				1. Food crop (no contact with edible portion) 2. Restricted recreational impoundment's	
Disinfected Seconday-23	×	×		23/100ml	Allowed one sample >240/100ml				1. Cemeteries 2. Freeway landscaping 3. Restricted access golf courses 4. Ornamental nursery stock and sod farm 5. Pasture for animals producing milk for human consumption 6. Non-edible vegetation with controlled access (not a park, playground or schoolyard)	1. Industrial boiler feed 2. Nonstructural fire fighting 3. Backfill consolidation around nonpotable piping 4. Soil compaction 5. Mixing concrete 6. Dust control on roads and streets 7. Cleaning roads, sidewalks and outdoor work areas 8. Industrial pw with no worker contact

*or a virus of at least equal resistance to disinfection
**provided irrigation with recycled water stops 14 days prior to harvesting/sale or allowing public access

Septic System
Distance Requirements

SEPTIC TANK TO:	**WATER WELLS**	**100'**
	LAKE OR RESERVOIR	**50'**
	FLOWING STREAM	**30'**
	DRAINAGE OR EPHEMERAL STREAM	**25'**
	CUT OR FILL BANK	**25'**
	STRUCTURE	**5'**
	PROPERTY LINE	**5'**
	D-BOX	**3'**
	WATER LINES	**10'** (laterally) **1'** (above pipe)

TANK SHALL BE LEVEL

D-BOX TO:	**PROPERTY LINES**	**10'**
	BUILDINGS	**5'**
	SEPTIC TANK OR LEACHING PIT	**3'**

D-BOX SHALL BE LEVEL [Sec. VII (B)(2)(a)]
12"x 12" w/ 3" min. liquid depth [Sec. VII (B)(2)(b)]

LEACH PITS TO:	**LAKE OR RESERVOIR**	**200'**
	WATER WELLS	**150'**
	FLOWING STREAM	**50'**
	DRAINAGE OR EPHEMERAL STREAM	**25'**
	CUT OR FILL BANK	**25'**
	SIDEWALLS OF PITS	**16'**
	PIT BOTTOM TO GROUND WATER	**10'**
	WATER LINES	**10'** (laterally) **1'** (above pipe)

3' MINIMUM DIAMETER (UNLESS OTHERWISE SPECIFIED; OR IF < 30' DEEP, 4' DIAMETER OR ADD ADDITIONAL 3' PIT)

INSPECTION PORT MINIMUM 12"OVERLAP OF LID ON TOP OF PIT >/= 1"

Septic System
Distance Requirements

LEACH LINE TO:	**LAKE OR RESERVOIR**	**100'**
	PUBLIC WELLS	**100'**
	PRIVATE WELLS	**100'**
	FLOWING STREAM	**30'**
	DRAINAGE OR EPHEMERAL STREAM	**25'**
	CUT OR FILL BANK	**25'**
	STRUCTURE	**10'**
	LEACH LINE (ON CENTER)	**10'**
	PROPERTY LINE	**5'**
	WATER LINES	**10'** (laterally)
		1' (above pipe)

MINIMUM WIDTH = 18"
MINIMUM DEPTH = 2'
MAXIMUM DEPTH = 3'

SOIL BACK FILL:
MINIMUM = 6"
MAXIMUM = 18"

LEACH TRENCH TO:	**LAKE OR RESERVOIR**	**200'**
	WATER WELLS	**100'**
	FLOWING STREAM	**30'**
	DRAINAGE OR EPHEMERAL STREAM	**25'**
	CUT OR FILL BANK	**25'**
	STRUCTURES	**10'**
	TRENCHES ON CENTER	**10'**
	TRENCH BOTTOM TO GROUND WATER	
	< 15' DEEP	**5'**
	> 15' DEEP	**10'**
	WATER LINES	**10'** (laterally)
		1' (above pipe)

MINIMUM WIDTH = 18"

10/21/2004

SACRAMENTO AREA
SEWER DISTRICT

SEWER ORDINANCE

Adopted to be effective on April 8, 2011

Sacramento Area Sewer District
10060 Goethe Road
Sacramento CA 95827

8. AGREEMENTS

8.1 Trunk Reimbursement

To promote equitable participation in the trunk sewer collection system by all new users, capital costs related to the construction or enlargement of trunk sewers may be reimbursed as described in this section. The District service area is divided into two geographical areas, relief and expansion as shown in Section 11.

8.1.1 Relief Area

If the proponent of a project in the relief area is required to construct trunk sewers, they will be reimbursed by the District, when funds become available.

8.1.2 Expansion Area

Project proponents will finance all trunk sewer costs and request reimbursement from the District according to the following provisions:

a. Trunk sewer facilities as defined in this Sewer Ordinance will be eligible for reimbursement.
b. Eligibility for reimbursement of interim sewer facilities is determined on a case-by-case basis. Determination of eligibility will be based on the planned timing of trunk and interceptor construction. Interim facilities shall be designed and constructed per District standards and specifications.
c. Reimbursements will be made at the discretion of the District in the form of credits, cash, or some combination as identified in the agreement.
    i. After the Board approves the reimbursement agreement, the project will be eligible for reimbursement credits. Credits will not exceed 80% of the projected costs until final project costs are known and agreed upon by the District.
    ii. Upon acceptance of trunk facilities, cash reimbursements will be made at the end of each quarter from expansion area sewer impact fees collected during the preceding quarter, minus the District's development review and administrative costs.
d. Earliest priority reimbursement agreements, determined by the year of acceptance of facilities, will have first priority for reimbursement based on available funds on a pro-rata basis of all outstanding same-year priority agreements.
e. Outstanding agreements with remaining balances of $50,000 or less will be paid in full before any pro-rata distribution, subject to the availability of funds.
f. The reimbursement agreement will be based on District approved plans and specifications and will not include any costs for accelerated construction or other additional costs incurred by the project proponents solely for convenience or benefit.
g. Reimbursement agreements will sunset at 15 years, whereupon no further reimbursement will be paid to the project proponent. All agreements can be extended with approval of the District Engineer before the expiration date. If the reimbursement agreement has expired, a retroactive agreement will have to be prepared and ratified by the Board.
h. Project proponents must update contact information on file with the District. If the District is unable submit a payment to the project proponent because of inaccurate contact information,

the District shall return the payment amount back into the available funds account 6 months after the date of the payment.

8.1.3 Agreement Procedure Requirements

In some instances, the District may require a project proponent to construct trunk sewer facilities or interim sewer facilities as a condition of approval for any improvement plans submitted within the District's service area. If so, the project proponent must contact the District before starting the design so the District can determine which of the following items will be necessary. The items then must be agreed to before starting the design.

a. A 'scope of work' for the trunk sewer portion of the work
b. A complete set of contract documents including specifications, improvement plans, geotechnical report, cost estimate and bid proposal form for review and approval by the District before scheduling a bid date
c. A request for a reimbursement agreement between the District and the project proponent that identifies the location of the improvements, the estimated quantities, a reimbursable sum, and the terms of the reimbursement
d. A signed statement indicating that the project proponent will agree to include all items of work shown on the approved contract documents
e. The reimbursement agreement must be executed before awarding the contract. An allowance for engineering and construction staking services will be added to the reimbursable amount. The allowance can be based either on identifiable trunk design costs minus all onsite or offsite right-of-way/easement acquisition costs or, if identifiable design costs are not available, on an amount not to exceed 6.5% of the reimbursable engineering and construction staking costs. Contingency costs may be added but shall not exceed 10% of the reimbursable construction costs. Reimbursement of contingency costs is subject to approval by the District Engineer and must be properly documented by the project proponent.
f. In the case of non-compliance, change orders that result in increased contract costs to obtain compliance with the approved contract documents will not be included as reimbursable costs.

8.1.4 Allowable Bidding Processes

Either the public bid process or the negotiated bid process will accomplish District reimbursement for the construction of trunk sewers. Once the District approves a reimbursement agreement, any change from one bid process to the other will require an amended agreement approved by the District Board.

8.1.4.1 Public Bid Process

Under the public bid process, all projects seeking reimbursement from the District will be publicly bid and awarded to the lowest responsive, responsible bidder. The project proponent must comply with all applicable requirements in the California Public Contract Code requirements, including the following:

a. Provide a minimum of 2 copies of the approved contract documents to each list of Builder's Exchanges and Construction Services contained in this Sewer Ordinance, unless otherwise approved by the District Engineer.

b. Provide a minimum of a 2-week bidding period.
c. Receive at least 3 bids on an approved set of contract documents. If fewer than 3 bids are received, the project proponent shall, before opening bids, investigate the reasons more bids were not received and present their findings to the District. The District will then decide whether the project should be re-bid, the bid date extended or the project awarded. If the District decides the project should be re-bid, the project proponent will have the option of either re-bidding the project or awarding the project to the lowest responsive, responsible bidder and receiving reimbursement based on the cost schedule method described in this Sewer Ordinance.
d. Hold a public bid-opening meeting. All bids shall be opened in public with a member of the District staff in attendance.
e. Must award the project to the lowest responsive responsible bidder as determined by the District and the project proponent.
f. If the project proponent determines that the low bidder is non-responsible, the project proponent will give the low bidder written notice of that determination and an opportunity of a hearing before an administrative hearing officer, the cost of which will be borne by the project proponent and not subject to reimbursement by the District. Following the conclusion of the administrative hearing, the administrative hearing officer will issue a written determination resolving all essential issues. This decision shall be issued within 5 calendar days of the conclusion of the hearing. The decision is final and may be appealed to a court of competent jurisdiction based solely upon the administrative record of the hearing. The project proponent shall provide notice to the District of any such non-responsibility proceeding and the findings of the administrative hearing officer.
g. Provide notice of prevailing wage requirement according to the provisions of the California Labor Code, Chapter 1 beginning at Section 1720, Part 7, Division 2.
h. Provide notice inviting a formal bid that states the time and place for the receiving and opening of sealed bids and that distinctly describes the project. The notice shall be published at least 14 calendar days before the date of opening the bids in a newspaper of general circulation printed and published in the District's jurisdiction.

If the project proponent meets these conditions, the District will reimburse the project proponent a sum equal to the unit prices contained in the lowest responsive, responsible bid multiplied by the appropriate as-built quantities and any approved change order amount pertaining to construction of the trunk sewer.

Failure to meet any of the conditions set forth above will result in the reimbursement's being calculated and paid on the basis of the amount that would have been payable under the cost schedule method.

8.1.4.2 Negotiated Bid Process

All project proponents wishing to receive reimbursement under the negotiated bid process must obtain advance written District approval. Approval depends on District review and acceptance of all bid items and the ability of the District to accurately identify prices and bid items not included in the cost schedule.

A project proponent might choose to negotiate the prices for the construction of the required improvements with a specific contractor or group of contractors. If so, the District will

determine the amount of reimbursement for the construction of the trunk sewer facilities included in the project. The District will base its amount on the unit prices shown on the cost schedule for sewer construction approved by the District or actual construction unit cost multiplied by the as-built quantities, whichever results in a lower total price for the work. In no case will the District reimburse the project proponent more than its actual costs. The cost schedule is updated annually and is available upon request. An allowance of not more than 6.5% of the of the identifiable trunk sewer engineering and construction staking services minus all onsite or offsite right-of-way/easement acquisition costs will be negotiated and included in the reimbursement agreement and added to the reimbursable amount for engineering and construction staking.

If the trunk sewer improvements contain specific items of work not shown on the cost schedule approved by the District, the District will review the items of work with the consulting engineer who prepared the plans. The District will then determine the appropriate amount to be reimbursed for the item of work and will include the amount within the reimbursement agreement for trunk sewer facilities. If the value of an item cannot be reasonably determined, the item shall be publicly bid separately and awarded to the lowest responsive, responsible bidder. The District reserves the right to reject the negotiated bid process on projects in which cost schedule values cannot be reasonably pre-determined.

In addition, project proponents must provide notice of prevailing wage requirement under the provisions of the California Labor Code Chapter 1, Section 1720, Part 7, Division 2.

8.1.5 Reimbursement for Construction Change Orders

Reimbursement shall be limited to quantities shown on the District approved improvement plans and on any change orders approved by the District Engineer. For construction change orders to be considered for reimbursement, the project proponent must:

a. Notify the District of any proposed change order before performing the change order work
b. Evaluate the change order request and present its validity and estimated cost along with supporting information to the District
c. Fully document any work performed under a change order to verify all associated costs

Failure to comply with any of these procedures will result in the requested change order becoming ineligible for reimbursement.

8.1.6 Sewer Impact Fee Credit Transfers

Sewer impact fee credits from reimbursement agreements may be transferred only to those parties with developments within the designated service area shown in the agreement at the time when sewer impact permits are issued and only if both the District and the project proponent have approved the transfer in writing. Sewer impact fee credit transfers will be allowed only if the District approves the transfer before sewer impact fees are paid on the parcel. Any fees paid before the District's approval of a fee credit transfer will not be refunded. Sewer impact fee credits are not transferable for sewer impact permits issued outside the designated service area shown in the agreement. Sewer impact fees will be calculated at the rate in effect at the time sewer connection permits are issued. The District will maintain a reimbursement credit balance account.

APPENDIX D: TWIN CITIES SITE GROUNDWATER DEPTH & QUALITY

CORRECTIONAL FACILITY WELL PERMIT
CORRECTIONAL FACILITY WELL WATER QUALITY
DWR DATABASE: TWIN CITIES SITE IRRIGATION WELL MAP
DWR DATABASE: TWIN CITIES SITE IRRIGATION WELL GROUNDWATER DEPTHS

Job #3030

APPLICATION & WATER WELL JOB PERMIT

SACRAMENTO COUNTY WP0029727
ENVIRONMENTAL MANAGEMENT DEPARTMENT (916) 386-6108

ENVIRONMENTAL HEALTH DIVISION
8475 JACKSON ROAD, SUITE 240
Sacramento, CA 95826

MUST BE COMPLETED IN DUPLICATE

FOR OFFICE USE ONLY

Date Received 8-20-91 DATE: 8-19-91 CT: 95 11678
Approved: ✓ Disapproved: Receipt #: 306258 Permit#:
By: Ken Tashimura Date: 8-20-91 Total Fee: #179.00 Date Issued: 8-20-91
(Permit expires 1 year from date Issued)

Grout Inspection by: KT Final Inspection By: Date:
Date: 8-21-91 Well Destruction By: Date:
REINSPECTION BY: DATE(s) FEE: @ $43.00 ea.:
COMMENTS:

Application is hereby made to the County Environmental Health Division for a permit to perform work at the location as indicated below:

JOB ADDRESS: 9850 TWIN CITIES ROAD, GALT, CA PARCEL #:
NEAREST CROSS STREET: TWIN CITIES Rd AND Hwy 99
OWNER'S NAME: ROMAN CATHOLIC BISHOP OF SACTO PHONE #:
OWNER'S ADDRESS: 1119 K STREET P.O. BOX 1706 CITY: SACTO 95812-1706
WELL DRILLING CO.: BEYLIK DRILLING INC. LICENSE #: 306291 TYPE: C-57
ADDRESS: 3429 Longview Dr CITY N. Highlands ZIP: 95660 PHONE: 916 485-0792

WORK TO BE PERFORMED:

X Construct Well (new) ___ Install New Pump ___ Destroy Well
___ Deepen Well ___ Repair/Replace Pump ___ Other (state)
___ Repair Well (state work) ___ Test Hole w/Destruction
COMMENTS:
DISTANCE TO NEAREST: Leach Field N/A Leach Pit N/A Septic Tank N/A
Sewer Line 400' Property Line 100' Stream, Ditch, Drainage Canal N/A
MUST ALSO SHOW ON PLOT PLAN

INTENDED USE:
X Domestic/Private
___ Domestic/Public
___ Irrigation
___ Industrial
___ Monitor
___ Other(state)

TYPE OF WELL:
___ Cable tool
___ Auger
___ Driven
___ Rotary
X Other(state) REVERSE ROTARY

CONSTRUCTION SPECIFICATIONS
BOREHOLE: Diam. 24, Depth 500, Gravel Pack? Yes
CASING: Diam. 12, Depth
If steel, Gage or Thickness .250"
If Plastic, Type (MUST MEET ASTM F-480)
If Conductor, Diam. 26" Depth 60'
GROUT: Depth 60' Material Used STEEL
COMMENTS:

PUMP INSTALLATION/REPAIR
CONTRACTOR: LICENSE# TYPE:
TYPE OF PUMP: HP:
WELL DESTRUCTION: Diameter: Depth: Material Used

1. I will comply with all Codes, Rules and Regulations of the State and County pertaining to or regulating well construction.
2. I will call for a grout/destruction inspection **at least 24 hours prior to pouring.**
3. I will submit a Water Well Driller's Report to the Environmental Health Division within ten (10) days of well completion.
4. I will obtain final approval before placing the well in service.

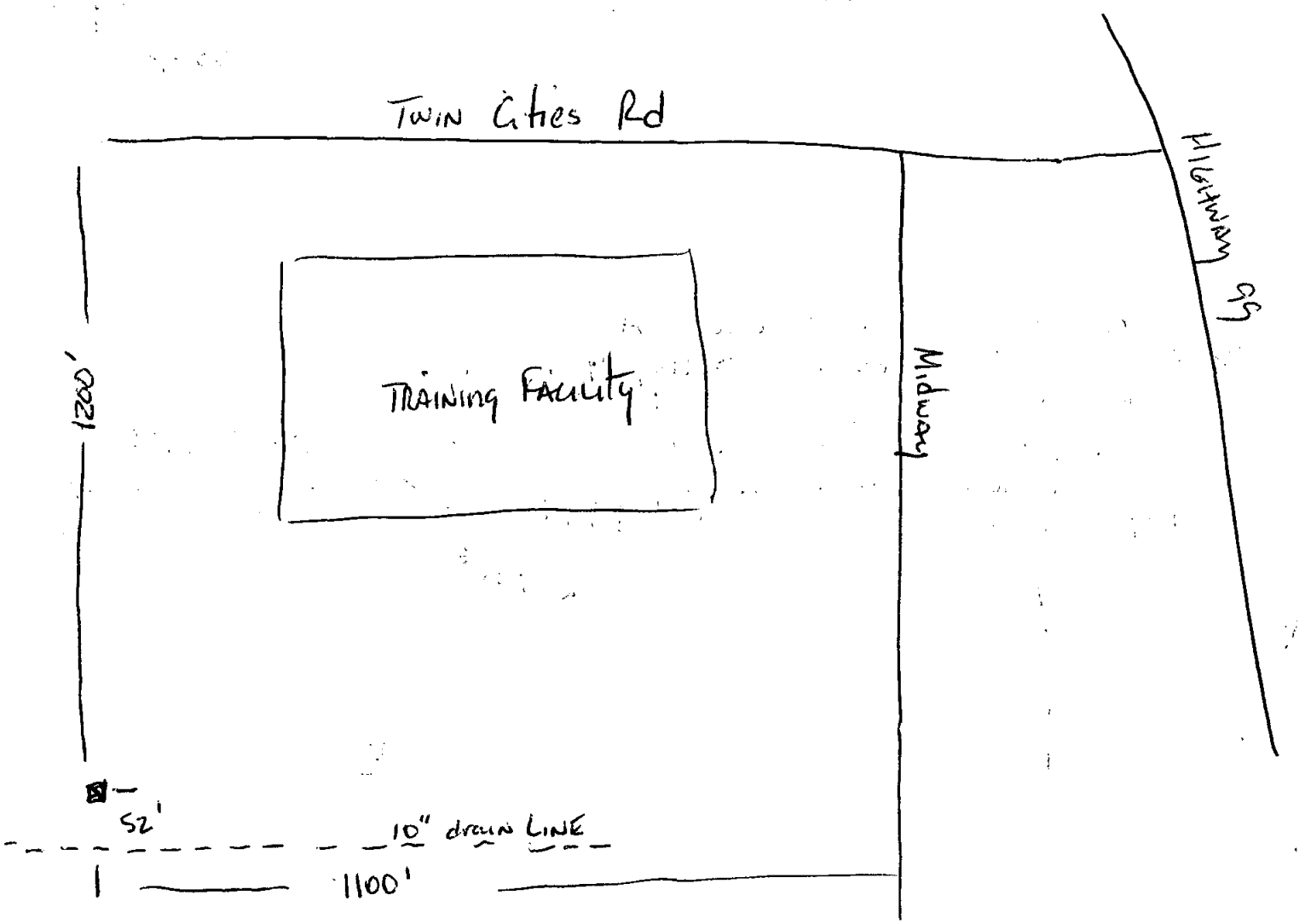
SIGNATURE: [signature] TITLE: Project Manager
(Property Owner/Well Driller)

DRAW PLOT PLAN ON REVERSE SIDE OR SUBMIT SEPARATE PLOT PLANS

EH-WS1 (10/88)

PLOT PLAN

SHOW: (1) LOT DIMENSIONS IN FEET (2) STREET(S) (3) WELL LOCATION (4) DISTANCE (IN FEET) FROM WELL TO: PROPERTY LINE, SEPTIC TANK, LEACH FIELD, SEEPAGE PIT, SEWER LINE, STREAM, DITCH OR DRAINAGE CANAL. (5) OTHER PERTINENT INFORMATION



NELSON LABORATORIES

ANALYTICAL CHEMISTS AND CONSULTANTS

TO: CATHOLIC DIOCESE OF SACRAMENTO

Chancery Office

P.O. Box 1706

Sacramento, CA 95808

Date: April 18, 1988

Report No. 2070

page 2 of two pages

Lab No. 2070-2

Following are the results of analysis of a sample or samples as received from you by this laboratory:

NAME OF MATERIAL water

Taken: 3/21/88

by Roger W. Buchwitz

For: St. Pius, 9850 Twin Cities Road, Galt
- requested by John Manning (209) 745-4737

GENERAL, MINERAL, NITRATES AND FLUORIDES - TITLE 22			level found:	California Administrative Code Title 22 Maximum Contaminant Levels
Carbonate (CO_3) (Alkalinity as $CaCO_3$)	ppm	(mg/L)	8	None given
Bicarbonate (HCO_3) (Alkalinity as $CaCO_3$)	ppm	(mg/L)	85	None given
Chloride (Cl)	ppm	(mg/L)	7	500
Sulfate (SO_4)	ppm	(mg/L)	*1	500
Nitrate (NO_3)	ppm	(mg/L)	*1	45
Calcium (Ca)	ppm	(mg/L)	6	None given
Magnesium (Mg)	ppm	(mg/L)	6	None given
Sodium (Na)	ppm	(mg/L)	26	None given
Total Dissolved Solids	ppm	(mg/L)	110	1000
Electrical Conductivity (micromhos/cm)			200	1600
Foaming Agents (MBAS)	ppm	(mg/L)	*0.02	0.5
pH			8.0	None given
Iron (Fe)	ppm	(mg/L)	0.15	0.3
Manganese (Mn)	ppm	(mg/L)	0.15	0.05
Copper (Cu)	ppm	(mg/L)	*0.05	1.0
Zinc (Zn)	ppm	(mg/L)	*0.05	5.0
Fluoride (F)	ppm	(mg/L)	0.2	See below**
Hardness (as $CaCO_3$)	ppm	(mg/L)	40	None given

** Fluoride - 1.4 to 2.4 dependent upon the annual average of the maximum daily air temperature.
mg/L - milligrams per liter
ppm - parts per million

* means "less than"

By Roger Buchwitz
Roger W. Buchwitz

copy to: John Manning

PHONE 931-1266
AREA CODE 209

REPORT NO. 2070

NELSON LABORATORIES

AGRICULTURAL CHEMISTS AND CONSULTANTS

3948 BUDWEISER COURT

STOCKTON, CALIF. 95205

April 18 19 88

TO CATHOLIC DIOCESE OF SACRAMENTO
Chancery Office
P.O. Box 1706

Sacramento, CA 95808

FOLLOWING ARE THE RESULTS OF ANALYSIS OF A SAMPLE OR SAMPLES AS RECEIVED FROM YOU BY THIS LABORATORY:

NAME OF MATERIAL water ~~RECEIVED~~ Taken 3/21/88 by Roger W. Buchwitz

Nelson Laboratories Sample No. 2070 -1

For: St. Pius, 9850 Twin Cities Road, Galt
- requested by John Manning (209) 745-4737

Bacteria sample taken at: St. Pius, 9850 Twin Cities Road, Galt

Sample source: hose bib at end of pressure tank

Number of positive 24 hour presumptive tubes: 0

Number of positive 48 hour presumptive tubes: 0

Total coliform level - five tube test - (MPN/100 mls): <2.2

This sample meets the safe drinking water bacteriological standards established by the California State Department of Public Health.

< means "less than"

copy to:
John Manning

NELSON LABORATORIES

BY R. W. Buchwitz

MORSE LABORATORIES, INC.

CHEMICAL ANALYSIS AND RESEARCH
1525 FULTON AVENUE
SACRAMENTO, CALIFORNIA 95825
481-3141

August 11, 1980

RECEIVED
AUG 25 1980
ENVIRONMENTAL HEALTH BRANCH

Henry Perez
Century 21
812 C Street
Galt, California 95632

Laboratory No. 15781 — Partial
Date Received 7/8/80
Sample 1 Water for Sanitary Analysis; 1 Water for General Mineral, General Physical, and Inorganic Chemical Analysis

Identification: Well on S.W. Corner Midway & Twin Cities, Galt, CA (ST. ~~Supply~~ Plus X)

Sanitary Analysis, MPN/100 ml	< 2.2
Bicarbonates (HCO_3) as $CaCO_3$, mg/L	94
Carbonates as $CaCO_3$, mg/L	Nil
Hydroxide as $CaCO_3$, mg/L	Nil
Alkalinity as $CaCO_3$, mg/L	94
Calcium (Ca), mg/L	10
Chloride (Cl), mg/L	10
Copper (Cu), mg/L	< 0.05
Odor	No detectable odor
Color, units	< 5
Turbidity, NTU	0.36
MBAS, mg/L	< 0.05
Iron (Fe), mg/L	0.05
Magnesium (Mg), mg/L	6
Manganese (Mn), mg/L	0.06 *
pH	8.0
Sodium (Na), mg/L	32
Sulfates (SO_4), mg/L	3
Electrical Conductivity, micromhos/cm	214
Total Dissolved Solids, mg/L	171
Hardness as $CaCO_3$, mg/L	50
Zinc (Zn), mg/L	0.005
Potassium (K), mg/L	1
Silica (SiO_2), mg/L	63
Nitrate-Nitrogen (NO_3-N), mg/L	0.77
Fluoride (F), mg/L	0.1

Arsenic (As), mg/L	< 0.006
Barium (Ba), mg/L	< 0.05
Cadmium (Cd), mg/L	< 0.005
Chromium (Cr), mg/L	< 0.02
Lead (Pb), mg/L	< 0.01
Mercury (Hg), mg/L	< 0.001
Selenium (Se), mg/L	< 0.002
Silver (Ag), mg/L	< 0.01

* Above limits set for good drinking water.

MORSE LABORATORIES, INC.

Marjorie L. Dewey

Marjorie L. Dewey
Director

MLD:db

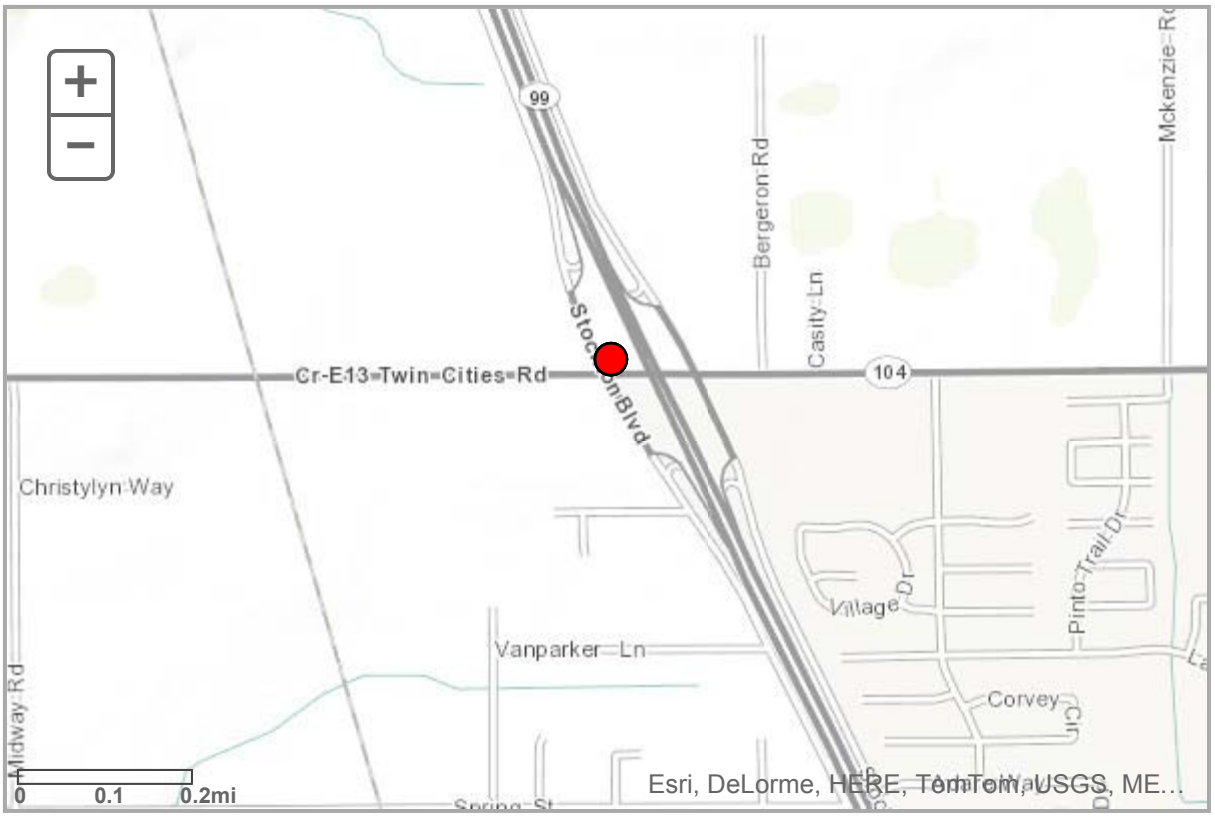
Groundwater Levels for Station 382913N1213131W001

Data for your selected well is shown in the tabbed interface below. To view data managed in the updated WDL tables, including data collected under the CASGEM program, click the "Recent Groundwater Level Data" tab. To view data stored in the former WDL tables, click the "Historical Groundwater Level Data" tab. To download the data in CSV format, click the "Download CSV File" button on the respective tab. Please note that the vertical datum for "recent" measurements is NAVD88, while the vertical datum for "historical" measurements is NGVD29. To change your well selection criteria, click the "Perform a New Well Search" button.

Station Data | Recent Groundwater Level Data | Historical Groundwater Level Data

State Well Number: 05N06E10P001M
Local Well ID: SCGA #25
Site Code: 382913N1213131W001
Latitude (NAD83): 38.291300
Longitude (NAD83): -121.3131
Groundwater Basin (code): Cosumnes (5-22.16)

Well Use: Irrigation
Well Status: Active
Well Completion Report Number: 64517
Reference Point Elevation (NAVD88 ft): 44.80
Ground Surface Elevation (NAVD88 ft): 43.50
Total Depth (ft): 384
Perforated Interval Depths (ft):

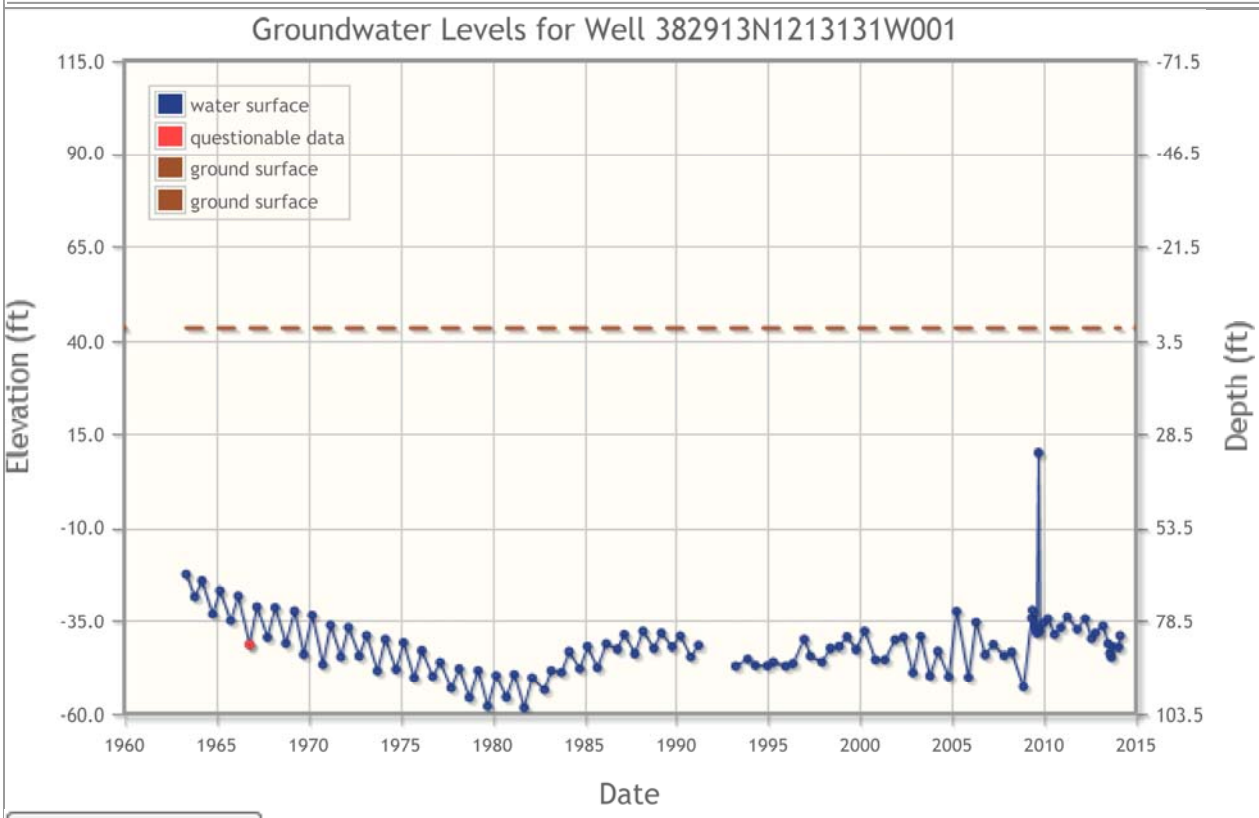


Perform a New Well Search

Groundwater Levels for Station 382913N1213131W001

Data for your selected well is shown in the tabbed interface below. To view data managed in the updated WDL tables, including data collected under the CASGEM program, click the "Recent Groundwater Level Data" tab. To view data stored in the former WDL tables, click the "Historical Groundwater Level Data" tab. To download the data in CSV format, click the "Download CSV File" button on the respective tab. Please note that the vertical datum for "recent" measurements is NAVD88, while the vertical datum for "historical" measurements is NGVD29. To change your well selection criteria, click the "Perform a New Well Search" button.

Station Data **Recent Groundwater Level Data** Historical Groundwater Level Data



Download CSV File

Date	RPE	GSE	RPWS	WSE	GS to WS	Msmt Code	Agency	Comments
05/10/1963	44.800	43.500	67.4	-22.6	66.1		1	
10/28/1963	44.800	43.500	73.2	-28.4	71.9		1	
03/19/1964	44.800	43.500	69.1	-24.3	67.8		1	
10/19/1964	44.800	43.500	77.9	-33.1	76.6		1	
03/11/1965	44.800	43.500	71.6	-26.8	70.3		1	
10/11/1965	44.800	43.500	79.7	-34.9	78.4		1	
03/08/1966	44.800	43.500	73	-28.2	71.7		1	
10/19/1966	44.800	43.500	86.2	-41.4	84.9	Q-4	1	
03/13/1967	44.800	43.500	75.9	-31.1	74.6		1	

10/11/1967	44.800	43.500	84.3	-39.5	83	1
03/11/1968	44.800	43.500	76.1	-31.3	74.8	1
10/11/1968	44.800	43.500	85.9	-41.1	84.6	1
03/31/1969	44.800	43.500	77	-32.2	75.7	1
10/01/1969	44.800	43.500	88.8	-44	87.5	1
03/16/1970	44.800	43.500	78.2	-33.4	76.9	1
10/15/1970	44.800	43.500	91.5	-46.7	90.2	1
03/15/1971	44.800	43.500	81	-36.2	79.7	1
10/06/1971	44.800	43.500	89.4	-44.6	88.1	1
03/06/1972	44.800	43.500	81.6	-36.8	80.3	1
10/05/1972	44.800	43.500	89.2	-44.4	87.9	1
03/01/1973	44.800	43.500	83.8	-39	82.5	1
10/02/1973	44.800	43.500	93.2	-48.4	91.9	1
03/08/1974	44.800	43.500	84.8	-40	83.5	1
10/08/1974	44.800	43.500	92.8	-48	91.5	1
03/04/1975	44.800	43.500	85.7	-40.9	84.4	1
10/01/1975	44.800	43.500	95.1	-50.3	93.8	1
03/02/1976	44.800	43.500	87.8	-43	86.5	1
10/04/1976	44.800	43.500	94.7	-49.9	93.4	1
03/01/1977	44.800	43.500	90.9	-46.1	89.6	1
10/06/1977	44.800	43.500	97.9	-53.1	96.6	1
03/13/1978	44.800	43.500	92.6	-47.8	91.3	1
10/02/1978	44.800	43.500	100.5	-55.7	99.2	1
03/23/1979	44.800	43.500	93.1	-48.3	91.8	1
10/01/1979	44.800	43.500	102.8	-58	101.5	1
03/17/1980	44.800	43.500	94.5	-49.7	93.2	1
10/06/1980	44.800	43.500	100.4	-55.6	99.1	1
03/11/1981	44.800	43.500	94.2	-49.4	92.9	1
09/25/1981	44.800	43.500	103.2	-58.4	101.9	1
03/01/1982	44.800	43.500	95.1	-50.3	93.8	1
11/03/1982	44.800	43.500	98.4	-53.6	97.1	1
03/15/1983	44.800	43.500	93.1	-48.3	91.8	1
10/05/1983	44.800	43.500	93.6	-48.8	92.3	1
03/06/1984	44.800	43.500	88.1	-43.3	86.8	1
10/04/1984	44.800	43.500	92.6	-47.8	91.3	1
03/04/1985	44.800	43.500	86.7	-41.9	85.4	1
09/18/1985	44.800	43.500	92.3	-47.5	91	1
03/13/1986	44.800	43.500	86	-41.2	84.7	1
10/20/1986	44.800	43.500	87.4	-42.6	86.1	1
03/05/1987	44.800	43.500	83.5	-38.7	82.2	1
10/01/1987	44.800	43.500	88.6	-43.8	87.3	1
03/11/1988	44.800	43.500	82.6	-37.8	81.3	1
10/14/1988	44.800	43.500	87.2	-42.4	85.9	1
03/10/1989	44.800	43.500	83.1	-38.3	81.8	1

10/11/1989	44.800	43.500	86.8	-42	85.5		1	
03/21/1990	44.800	43.500	83.9	-39.1	82.6		1	
10/15/1990	44.800	43.500	89.4	-44.6	88.1		1	
03/20/1991	44.800	43.500	86.4	-41.6	85.1		1	
04/15/1992	44.800	43.500				N-7	1	NOT MEASU…
11/15/1992	44.800	43.500				N-9	1	
03/26/1993	44.800	43.500	91.9	-47.1	90.6		1	
11/22/1993	44.800	43.500	90	-45.2	88.7		1	
04/22/1994	44.800	43.500	91.7	-46.9	90.4		1	
12/16/1994	44.800	43.500	91.8	-47	90.5		1	
04/13/1995	44.800	43.500	90.8	-46	89.5		1	
12/14/1995	44.800	43.500	91.9	-47.1	90.6		1	
05/03/1996	44.800	43.500	91.2	-46.4	89.9		1	
12/18/1996	44.800	43.500	84.8	-40	83.5		1	
04/17/1997	44.800	43.500	89.2	-44.4	87.9		1	
12/02/1997	44.800	43.500	90.8	-46	89.5		1	
05/18/1998	44.800	43.500	87.2	-42.4	85.9		1	
11/12/1998	44.800	43.500	86.7	-41.9	85.4		1	
04/16/1999	44.800	43.500	84.1	-39.3	82.8		1	
10/13/1999	44.800	43.500	87.5	-42.7	86.2		1	
03/30/2000	44.800	43.500	82.6	-37.8	81.3		1	
11/01/2000	44.800	43.500	90.2	-45.4	88.9		1	
05/04/2001	44.800	43.500	90.2	-45.4	88.9		1	
11/27/2001	44.800	43.500	84.9	-40.1	83.6		1	
05/08/2002	44.800	43.500	84.2	-39.4	82.9		1	
11/15/2002	44.800	43.500	93.7	-48.9	92.4		1	
04/15/2003	44.800	43.500	84	-39.2	82.7		1	
10/17/2003	44.800	43.500	94.6	-49.8	93.3		1	
03/25/2004	44.800	43.500	88	-43.2	86.7		1	
10/25/2004	44.800	43.500	94.8	-50	93.5		1	
03/30/2005	44.800	43.500	77.1	-32.3	75.8		1	
11/22/2005	44.800	43.500	95	-50.2	93.7		1	
04/20/2006	44.800	43.500	80.2	-35.4	78.9		1	
10/17/2006	44.800	43.500	88.9	-44.1	87.6		1	
03/28/2007	44.800	43.500	86.2	-41.4	84.9		1	
10/29/2007	44.800	43.500	89.1	-44.3	87.8		1	
03/28/2008	44.800	43.500	88.2	-43.4	86.9		1	
11/18/2008	44.800	43.500	97.6	-52.8	96.3		1	
04/27/2009	44.800	43.500	79	-34.2	77.7		1	
05/15/2009	44.800	43.500	76.8	-32	75.5		1	
06/22/2009	44.800	43.500	81.1	-36.3	79.8		1	
07/14/2009	44.800	43.500	82.3	-37.5	81		1	
08/10/2009	44.800	43.500	83.2	-38.4	81.9		1	
09/14/2009	44.800	43.500	34.9	9.9	33.6		1	

10/12/2009	44.800	43.500	82.6	-37.8	81.3		1	
11/11/2009	44.800	43.500				N-7	1	PRIORITY OT..
12/16/2009	44.800	43.500	80.5	-35.7	79.2		1	
03/17/2010	44.800	43.500	79.1	-34.3	77.8		1	
07/26/2010	44.800	43.500	83.5	-38.7	82.2		1	
11/29/2010	44.800	43.500	81.6	-36.8	80.3		1	
04/06/2011	44.800	43.500	78.6	-33.8	77.3		1	
10/19/2011	44.800	43.500	82.1	-37.3	80.8		1	
03/26/2012	44.800	43.500	79.1	-34.3	77.8		1	
07/30/2012	44.800	43.500	84.6	-39.8	83.3		1	
10/17/2012	44.800	43.500	83.1	-38.3	81.8		1	
03/15/2013	44.800	43.500	81.2	-36.4	79.9		1	
06/25/2013	44.800	43.500	86	-41.2	84.7		1	
07/29/2013	44.800	43.500	88.5	-43.7	87.2		1	
08/27/2013	44.800	43.500	89.5	-44.7	88.2		1	
09/24/2013	44.800	43.500	86.8	-42	85.5		1	
10/28/2013	44.800	43.500				N-9	1	Construction
11/25/2013	44.800	43.500				N-9	1	Construction
12/24/2013	44.800	43.500				N-9	1	Construction
01/24/2014	44.800	43.500	86.9	-42.1	85.6		1	Construction
02/21/2014	44.800	43.500	83.8	-39	82.5		1	

All elevation and depth measurements are in feet. The vertical datum for recent measurements is NAVD88.

Perform a New Well Search

APPENDIX E: HISTORIC RANCHERIA SITE GROUNDWATER DEPTH & QUALITY

COSUMNES RIVER INDIAN ASSOCIATION WELL CONSTRUCTION
COSUMNES RIVER INDIAN ASSOCIATION WELL WATER QUALITY
DWR DATABASE: HISTORIC RANCHERIA SITE NEIGHBORING WELL MAP
DWR DATABASE: HISTORIC WATER QUALITY IN HISTORIC RANCHERIA SITE NEIGHBORING WELLS
DWR DATABASE: HISTORIC RANCHERIA NEIGHBORING RESIDENTIAL WELL PLAN
DWR DATABASE: HISTORIC RANCHERIA NEIGHBORING RESIDENTIAL WELL GROUNDWATER DEPTHS

Drinking Water Source Assessment

Water System

COSUMNES RIVER INDIAN ASSOC

Sacramento County

Water Source

MAIN WELL

Assessment Date

May, 2002

California Department of Health Services
Drinking Water Field Operations Branch
LPA Sacramento County

District No.	**64**
System No.	**3400168**
Source No.	**001**
PS Code	**07N/06E-36L01 M**

Drinking Water Source Assessment and Protection (DWSAP) Program

Assessment Summary

District Name LPA Sacramento County **District No.** 64 **County** Sacramento

System Name COSUMNES RIVER INDIAN ASSOC **System No.** 3400168

Source Name MAIN WELL **Source No.** 001 **PS Code** 07N/06E-36L01 M

Completed by Thomas Walton **Date** May, 2002

Description of System and Source

The COSUMNES RIVER INDIAN ASSOC water system is located in Sacramento County and serves the consumnes river indian reservation. There are approximately 11 service connections serving a population of 17.

The drinking water source for the COSUMNES RIVER INDIAN ASSOC water system is a well located in the wilton area. The RECHARGE AREA for the source includes approximately 122| square miles. General land use is agricultural | urban .

Assessment Procedures

The assessment of the source MAIN WELL was conducted by the Sacramento County Environmental Management Derpatment, Small Water Systems Program, . The following sources of information were used in the assessment: ,water system files, County records, .

Procedures used to conduct the assessment include:
File Review
Field Review
Meeting with the water system
Use GIS

Contents of this Assessment

Yes [X]	No [ ]	**Assessment Summary**
Yes [X]	No [ ]	**Vulnerability Summary**
Yes [ ]	No [X]	**Source Location Form**
Yes [X]	No [ ]	**Delineation of Ground Water Protection Zones**
Yes [X]	No [ ]	**Physical Barrier Effectiveness Checklist**
Yes [X]	No [ ]	**Source Data Sheet**
Yes [X]	No [ ]	**Inventory of Possible Contaminating Activities**
Yes [X]	No [ ]	**Vulnerability Ranking**
Yes [X]	No [ ]	**Assessment Map**

Drinking Water Source Assessment and Protection (DWSAP) Program

Vulnerability Summary

District Name LPA Sacramento County **District No.** 64 **County** Sacramento

System Name COSUMNES RIVER INDIAN ASSOC **System No.** 3400168

Source Name MAIN WELL **Source No.** 001 **PS Code** 07N/06E-36L01 M

Completed by Thomas Walton **Date** May, 2002

THE FOLLOWING INFORMATION MUST BE INCLUDED IN THE SYSTEM CONSUMER CONFIDENCE REPORT

A source water assessment was conducted for the **MAIN WELL**

of the **COSUMNES RIVER INDIAN ASSOC** water system in **May, 2002**

The source is considered most vulnerable to the following activities not associated with any detected contaminants:

Airports - Maintenance/ fueling areas
Animal Feeding Operations as defined in federal regulation2
Automobile- Gas stations
Chemical/petroleum processing/storage
Concentrated Animal Feeding Operations
Dry cleaners
Historic gas stations
Historic waste dumps/ landfills
Injection wells/ dry wells/ sumps
Known Contaminant Plumes
Landfills/dumps
Metal plating/ finishing/fabricating
Military installations
Mining operations - Active
Mining operations - Historic
Plastics/synthetics producers
Septic systems - high density
Underground Injection of Commercial/Industrial Discharges
Underground storage tanks - Confirmed leaking tanks
Wastewater treatment plants

Discussion of Vulnerability

"There have been no contaminants detected in the water supply, however the source is still considered vulnerable to activities located near the drinking water source."

Vulnerability Summary

System Name COSUMNES RIVER INDIAN ASSOC **System No.** 3400168

Source Name MAIN WELL **Source No.** 001 **PS Code** 07N/06E-36L01 M

A copy of the complete assessment may be viewed at:

SACRAMENTO COUNTY ENVIRONMENTAL MANAGEMENT DEP
8475 JACKSON ROAD
SUITE 240
SACRAMENTO, CA 95826

You may request a summary of the assessment be sent to you by contacting:

THOMAS I WALTON
SENIOR ENVIRONMENTAL HEALTH SPECIALIST
916-875-8449
916-874-8513 (fax)
WALTONT@SACCOUNTY.NET

Drinking Water Source Assessment and Protection (DWSAP) Program

Physical Barrier Effectiveness (PBE)

District Name LPA Sacramento County **District No.** 64 **County** Sacramento

System Name COSUMNES RIVER INDIAN ASSOC **System No.** 3400168

Source Name MAIN WELL **Source No.** 001 **PS Code** 07N/06E-36L01 M

Completed by Thomas Walton **Date** May, 2002

Parameter	Transient Noncommunity System	Possible Points	This Source	Score
Aquifer Material				
Type of material within aquifer				
1. Porous Media (Interbedded sands, silts, clays, gravels)		10	X	**10**
2. Fractured rock (Low Physical Barrier Effectiveness - no further questions required)		0		
Pathways of Contamination				
Presence of Abandoned or Improperly Destroyed Wells				
Present within Zone A (2 year TOT distance)	Yes	0		
	No	5	X	**5**
	Unknown	0		
Static Water Conditions				
Depth to Static Water (DTW) **92** feet	0 to 20 feet	0		
	20 to 50 feet	2		
	50 to 100 feet	6	X	**6**
	Greater than 100 feet	10		
	Unknown	0		
Well Operation				
Depth to Uppermost Perforations (DUP) **0** feet				
Maximum Pumping Rate of Well (Q) **0** gallons/minute				
Length of Screened Interval (H) **0** feet				
	Less than 5	0		
[DUP - DTW / Q/H] _____	Between 5 and 10	5		
	Greater than 10	10		
	Unknown	0	X	**0**
Well Construction				
Sanitary Seal (Annular Seal) Depth	None or less than 20 feet	0		
50 feet	Between 20 and 50 feet	6		
	50 feet or greater	10	X	**10**
	Unknown	0		
Surface Seal (concrete cap)	Not present or improperly constructed	0		
	Watertight, slopes away from well at least 2' laterally in all directions	4	X	**4**
	Unknown	0		

Physical Barrier Effectiveness (PBE)

System Name COSUMNES RIVER INDIAN ASSOC **System No.** 3400168

Source Name MAIN WELL **Source No.** 001 **PS Code** 07N/06E-36L01 M

Parameter	Transient Noncommunity System	Possible Points	This Source	Score
Well Construction				
Flooding potential at well site	Subject to localized flooding (i.e. in low area or unsealed pit or vault) or within 100 year flood plain	0		
	Not subject to flooding	1	X	1
	Unknown	0		
Security at well site	Not secure	0		
	Secure	5	X	5
	Unknown	0		

Score	Effectiveness
0 to 35	Low
36 to 69	Moderate
70 to 100	High

Score 46

Effectiveness Moderate

Drinking Water Source Assessment and Protection (DWSAP) Program

Inventory of Possible Contaminating Activities (PCA Inventory)

District Name LPA Sacramento County **District No.** 64 **County** Sacramento

System Name COSUMNES RIVER INDIAN ASSOC **System No.** 3400168

Source Name MAIN WELL **Source No.** 001 **PS Code** 07N/06E-36L01 M

Completed by Thomas Walton **Date** June, 2001

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
Commercial/Industrial					
Automobile- Body shops (H)	N	N	N		
Automobile- Car washes (M)	N	N	N		
Automobile- Gas stations (VH)	N	N	N		
Automobile- Repair shops (H)	N	Y	N		
Boat services/repair/ refinishing (H)	N	N	N		
Chemical/petroleum pipelines (H)	N	N	N		
Chemical/petroleum processing/storage (VH)	N	N	N		
Dry cleaners (VH)	N	N	N		
Electrical/electronic manufacturing (H)	N	N	N		
Fleet/truck/bus terminals (H)	N	N	N		
Furniture repair/ manufacturing (H)	N	N	N		
Home manufacturing (H)	N	N	N		
Junk/scrap/salvage yards (H)	N	N	N		
Machine shops (H)	N	N	N		
Metal plating/ finishing/fabricating (VH)	N	N	N		
Photo processing/printing (H)	N	N	N		
Plastics/synthetics producers (VH)	N	N	N		
Research laboratories (H)	N	N	N		
Wood preserving/treating (H)	N	N	N		
Wood/pulp/paper processing and mills (H)	N	N	N		
Lumber processing and manufacturing (H)	N	N	N		
Sewer collection systems (H, if in Zone A, otherwise L)	N	N	N		
Parking lots/malls (>50 spaces) (M)	N	N	N		
Cement/concrete plants (M)	N	N	N		
Food processing (M)	N	N	N		
Funeral services/graveyards (M)	N	N	N		
Hardware/lumber/parts stores (M)	N	N	N		

Y = Yes N = No U = Unknown

*** = A contaminant potentially associated with this activity has been detected in the water supply.**

Inventory of Possible Contaminating Activities (PCA Inventory)

System Name COSUMNES RIVER INDIAN ASSOC **System No.** 3400168

Source Name MAIN WELL **Source No.** 001 **PS Code** 07N/06E-36L01 M

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
Commercial/Industrial					
Appliance/Electronic Repair (L)	N	N	N		
Office buildings/complexes (L)	N	N	Y		
Rental Yards (L)	N	N	N		
RV/mini storage (L)	N	N	N		
Residential/Municipal					
Airports - Maintenance/ fueling areas (VH)	N	N	N		
Landfills/dumps (VH)	N	N	N		
Railroad yards/ maintenance/ fueling areas (H)	N	N	N		
Septic systems - high density (>1/acre) (VH if in Zone A, otherwise M)	N	N	N		
Sewer collection systems (H, if in Zone A, otherwise L)	N	N	N		
Utility stations - maintenance areas (H)	N	N	N		
Wastewater treatment plants (VH in Zone A, otherwise H)	N	N	N		
Drinking water treatment plants (M)	N	N	N		
Golf courses (M)	N	N	N		
Housing - high density (>1 house/0.5 acres) (M)	N	N	N		
Motor pools (M)	N	N	N		
Parks (M)	N	N	N		
Waste transfer/recycling stations (M)	N	N	N		
Apartments and condominiums (L)	N	N	N		
Campgrounds/ Recreational areas (L)	N	N	N		
Fire stations (L)	N	N	N		
RV Parks (L)	N	N	N		
Schools (L)	N	N	N		
Hotels, Motels (L)	N	N	N		
Agricultural/Rural					
Grazing (> 5 large animals or equivalent per acre) (H in Zone A, otherwise M)	N	Y	N		
Concentrated Animal Feeding Operations (CAFOs) as defined in federal regulation1 (VH in Zone A, otherwise	N	N	N		

Y = Yes N = No U = Unknown
*** = A contaminant potentially associated with this activity has been detected in the water supply.**

Inventory of Possible Contaminating Activities (PCA Inventory)

System Name COSUMNES RIVER INDIAN ASSOC **System No.** 3400168

Source Name MAIN WELL **Source No.** 001 **PS Code** 07N/06E-36L01 M

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
Agricultural/Rural					
H)					
Animal Feeding Operations as defined in federal regulation2 (VH in Zone A, otherwise H)	N	N	N		
Other Animal operations (H in Zone A, otherwise M)	N	N	N		
Farm chemical distributor/ application service (H)	N	N	N		
Farm machinery repair (H)	N	N	N		
Septic systems - low density (<1/acre) (H in Zone A, otherwise L)	Y	N	N		
Lagoons / liquid wastes (H)	N	N	N		
Machine shops (H)	N	N	N		
Pesticide/fertilizer/ petroleum storage & transfer areas (H)	N	N	N		
Agricultural Drainage (H in Zone A, otherwise M)	N	N	N		
Wells - Agricultural/ Irrigation (H)	N	N	N		
Managed Forests (M)	N	N	N		
Crops, irrigated (Berries, hops, mint, orchards, sod, greenhouses, vineyards, nurseries, vegetable) (M)	N	N	N		
Fertilizer, Pesticide/ Herbicide Application (M)	N	N	N		
Sewage sludge/biosolids application (M)	N	N	N		
Crops, nonirrigated (e.g., Christmas trees, grains, grass seeds, hay, pasture) (L) (includes drip-irrigated crops)	N	N	N		
Other					
NPDES/WDR permitted discharges (H)	N	N	N		
Underground Injection of Commercial/Industrial Discharges (VH)	N	N	N		
Historic gas stations (VH)	N	N	N		
Historic waste dumps/ landfills (VH)	N	N	N		
Illegal activities/ unauthorized dumping (H)	N	N	N		
Injection wells/ dry wells/ sumps (VH)	N	N	N		
Known Contaminant Plumes (VH)	N	N	N		
Military installations (VH)	N	N	N		
Mining operations - Historic (VH)	N	N	N		

Y = Yes N = No U = Unknown
*** = A contaminant potentially associated with this activity has been detected in the water supply.**

Inventory of Possible Contaminating Activities (PCA Inventory)

System Name COSUMNES RIVER INDIAN ASSOC **System No.** 3400168

Source Name MAIN WELL **Source No.** 001 **PS Code** 07N/06E-36L01 M

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
Other					
Mining operations - Active (VH)	N	N	N		
Mining - Sand/Gravel (H)	N	N	N		
Wells - Oil, Gas, Geothermal (H)	N	N	N		
Salt Water Intrusion (H)	N	N	N		
Recreational area - surface water source (H)	N	N	N		
Underground storage tanks - Confirmed leaking tanks (VH)	N	N	N		
Underground storage tanks - Decommissioned - inactive tanks (L)	N	N	N		
Underground storage tanks - Non-regulated tanks (tanks smaller than regulatory limit) (H)	N	N	N		
Underground storage tanks - Not yet upgraded or registered tanks (H)	N	N	N		
Underground storage tanks - Upgraded and/or registered - active tanks (L)	N	N	N		
Above ground storage tanks (M)	N	N	N		
Wells - Water supply (M)	N	N	N		
Construction/demolition staging areas (M)	N	N	N		
Contractor or government agency equipment storage yards (M)	N	N	N		
Dredging (M)	N	N	N		
Transportation corridors - Freeways/state highways (M)	N	N	N		
Transportation corridors - Railroads (M)	N	Y	N		
Transportation corridors - Historic railroad right-of-ways (M)	N	N	N		
Transportation corridors - Road Right-of-ways (herbicide use areas) (M)	N	N	N		
Transportation corridors - Roads/ Streets (L)	Y	N	N		
Hospitals (M)	N	N	N		
Storm Drain Discharge Points (M)	N	N	N		
Storm Water Detention Facilities (M)	N	N	N		
Artificial Recharge Projects - Injection wells (potable water) (L)	N	N	N		

Y = Yes N = No U = Unknown

* = A contaminant potentially associated with this activity has been detected in the water supply.

Inventory of Possible Contaminating Activities (PCA Inventory)

System Name COSUMNES RIVER INDIAN ASSOC **System No.** 3400168

Source Name MAIN WELL **Source No.** 001 **PS Code** 07N/06E-36L01 M

PCA (Risk Ranking)	PCA in Zone A	PCA in Zone B5	PCA in Zone B10	*	Comments
Other					
Artificial Recharge Projects - Injection wells (non-potable water) (M)	N	N	N		
Artificial Recharge Projects - Spreading Basins (potable water) (L)	N	N	N		
Artificial Recharge Projects - Spreading Basins (non-potable water) (M)	N	N	N		
Medical/dental offices/clinics (L)	N	N	N		
Veterinary offices/clinics (L)	N	N	N		
Surface water - streams/ lakes/rivers (L)	N	N	N		
Wells - monitoring, test holes (L)	N	N	N		

Y = Yes N = No U = Unknown
*** = A contaminant potentially associated with this activity has been detected in the water supply.**

Delineation of Ground Water Protection Zones

District Name	LPA Sacramento County	**District No.**	64	**County**	Sacramento
System Name	COSUMNES RIVER INDIAN ASSOC			**System No.**	3400168
Source Name	MAIN WELL	**Source No.**	001	**PS Code**	07N/06E-36L01 M
Completed by	Thomas Walton	**Date**	June, 2001		

Method Used to Delineate Protection Zones

1. Calculated Fixed Radius
2. Modified Calculated Fixed Radius (Attach documentation for direction of ground water flow.)
3. More Detailed Methods

X 4. Arbitrary Fixed Radius (For use only by or permission of DHS)

Protection Zone		Minimum Value	Radius of Protection Zone
Zone A - 2 Year TOT*		600 Feet	600 Feet
Zone B5 - 5 Year TOT*		1,000 Feet	1,000 Feet
Zone B10 - 10 Year TOT*		1,500 Feet	1,500 Feet

COUNTY OF SACRAMENTO
DEPARTMENT OF COMMUNITY HEALTH
ENVIRONMENTAL HEALTH PROGRAMS

WELL DATA

(1) Water System & Address: CONSUMNES RIVER INDIAN ASSOCIATION

(2) Source of Information Charles Mc Kean

Collected by Steve Kalvelage Date 3-7-78

(3) Number or Name #1

Date drilled 7-18-72

(4) Location: 75' north of Rancheria Drive

Distance to: Sewer 100' septic tank

Sewage disposal septic tank

Abandoned well n/a

Nearest property line about 40'

(5) Well Depth 196'

(6) Casing: Depth 140'

Diameter 10"

Kind steel

Height above floor 2'

Distance to highest perforations unknown

Surface sealed (yes or no) yes

Gravel pack (yes or no) yes

Second casing depth 140'

Second casing diameter 10"

Annular seal (depth) unknown

(7) Impervious Strata: Thickness unknown

Penetrated Depth to unknown

(8) Water Levels: Surface unknown

Depth to Static 92'

When pumping unknown

(9) Pump: Make Advance

Type submersible

Capacity, g.p.m. unknown

Lubrication sealed

Power $7\frac{1}{2}$ hp

Auxiliary power none

Control automatic pressure switch

Discharge to pressure tank

Sanitary seal yes

(10) Frequency of Use continuous

(11) Flood Hazard no

(12) Remarks and Defects
(Use other side if necessary)

Drinking Water Source Assessment and Protection (DWSAP) Program

Vulnerability Ranking

District Name LPA Sacramento County **District No.** 64 **County** Sacramento

System Name COSUMNES RIVER INDIAN ASSOC **System No.** 3400168

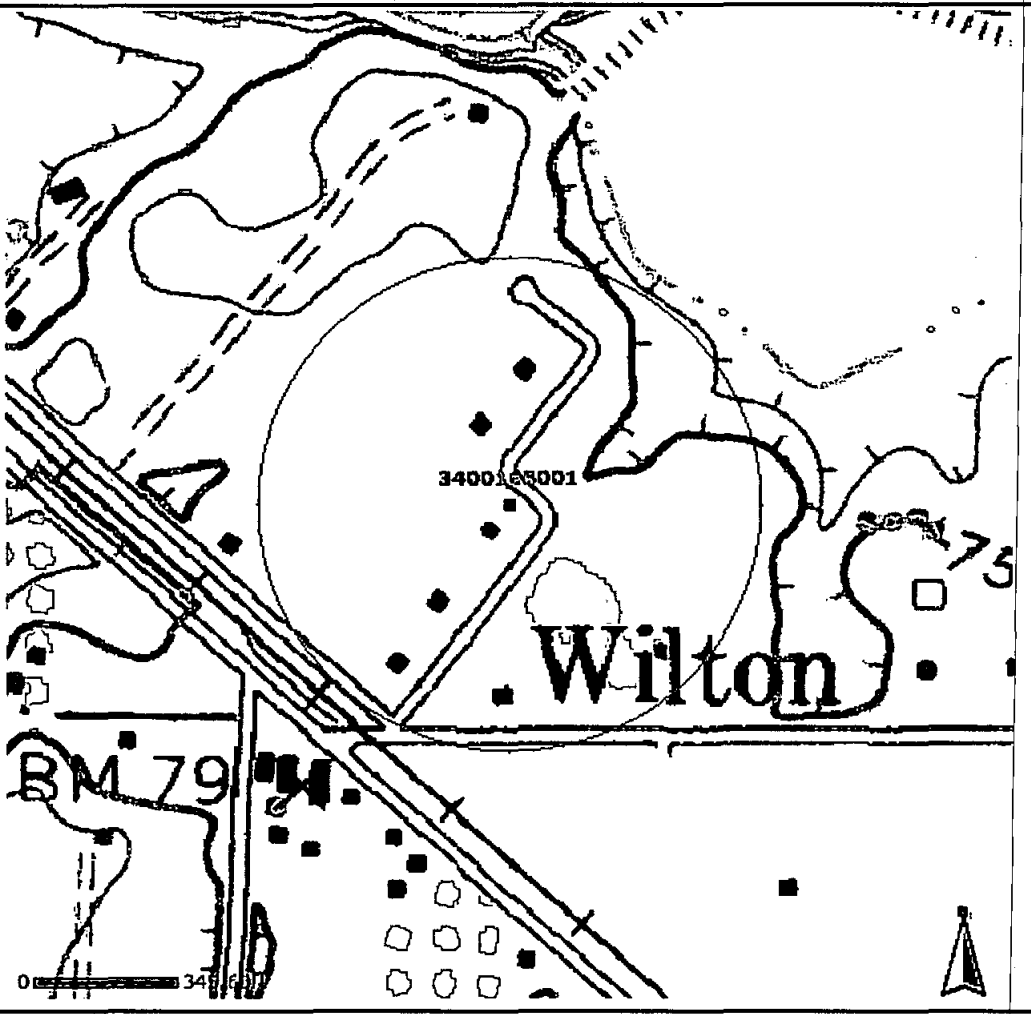
Source Name MAIN WELL **Source No.** 001 **PS Code** 07N/06E-36L01 M

Completed by Thomas Walton **Date** May, 2002

Zone	PCA (Risk Ranking)	*	PCA Risk Points	Zone Points	PBE Points	Vulnerability Score
A	Airports - Maintenance/ fueling areas (VH)		7	5	3	15
A	Animal Feeding Operations as defined in federal regulation2 (VH)		7	5	3	15
A	Automobile- Gas stations (VH)		7	5	3	15
A	Chemical/petroleum processing/storage (VH)		7	5	3	15
A	Concentrated Animal Feeding Operations (CAFOs) as defined in federal regulation1 (VH)		7	5	3	15
A	Dry cleaners (VH)		7	5	3	15
A	Historic gas stations (VH)		7	5	3	15
A	Historic waste dumps/ landfills (VH)		7	5	3	15
A	Injection wells/ dry wells/ sumps (VH)		7	5	3	15
A	Known Contaminant Plumes (VH)		7	5	3	15
A	Landfills/dumps (VH)		7	5	3	15
A	Metal plating/ finishing/fabricating (VH)		7	5	3	15
A	Military installations (VH)		7	5	3	15
A	Mining operations - Active (VH)		7	5	3	15
A	Mining operations - Historic (VH)		7	5	3	15
A	Plastics/synthetics producers (VH)		7	5	3	15
A	Septic systems - high density (>1/acre) (VH)		7	5	3	15
A	Underground Injection of Commercial/Industrial Discharges (VH)		7	5	3	15
A	Underground storage tanks - Confirmed leaking tanks (VH)		7	5	3	15
A	Wastewater treatment plants (VH)		7	5	3	15
A	Agricultural Drainage (H)		5	5	3	13
A	Grazing (> 5 large animals or equivalent per acre) (H)		5	5	3	13
A	Lagoons / liquid wastes (H)		5	5	3	13
A	Other Animal operations (H)		5	5	3	13
A	Septic systems - low density (<1/acre) (H)		5	5	3	13
A	Sewer collection systems (H)		5	5	3	13
A	Fertilizer, Pesticide/ Herbicide Application (M)		3	5	3	11
A	Sewage sludge/biosolids application (M)		3	5	3	11

*** = A contaminant potentially associated with this activity has been detected in the water supply.**

DWSAP Ground Water Zone Interface



Well Position *	GPS'd	Longitude	Latitude
	Yes	-121.271	38.413

* GPS'd well location coordinates have been rounded to 3 decimal places due to security concerns.

Well Information	
Well Number	3400168001
Media Type	Porous Media
System Type	Transient Non-Community System
Effective Porosity (n , decimal percent)	0
Screened Interval (H , feet)	0
Pumping Capacity (Q , gpm)	0
Azimuth of Flow (a , degrees)	0 - No Translation
Additional Information	
System Number	3400168
System Name	COSUMNES RIVER INDIAN ASSOC
Source Number	001
Source Name	MAIN WELL
District Number/Name	64/Sacramento County
County Number/Name	34/Sacramento County

Radii Measures	
Defaults Used	Yes
R2	600 ft
R5	N/A
R10	N/A

EDT

GENERAL MINERAL & PHYSICAL & INORGANIC ANALYSIS (9/99)

Date of Report: 00/07/21 Sample ID No.S0795-1A

Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director: _____

Name of Sampler:BENJIE Employed By: CLS

Date/Time Sample Collected:00/07/07/1545 | Date/Time Sample Received @ Lab:00/07/07/1805 | Date Analyses Completed:00/07/07

System Name:COSUMNES RIVER INDIAN ASSOC | System Number: 3400168

Name or Number of Sample Source:MAIN WELL

* User ID: 34C Station Number: 07N/06E-36L01 M *
* Date/Time of Sample: |00|07|07|1545| Laboratory Code: 1080 *
* YY MM DD TTTT YY MM DD *
* Date Analysis completed: |00|07|07| *
* Submitted by:_____ Phone #:_____ *

PAGE 1 OF 1

ADDITIONAL ANALYSES

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
1000	ug/L	Nitrite as Nitrogen(N) (ug/L)	00620	ND	400

+ Indicates Secondary Drinking Water Standards

01

03

EDT

GENERAL MINERAL & PHYSICAL & INORGANIC ANALYSIS (9/99)

Date of Report: 00/07/21 Sample ID No.S0795-1A

Laboratory Signature Lab

Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director: _____

Name of Sampler:BENJIE Employed By: CLS

Date/Time Sample Collected:00/07/07/1545 | Date/Time Sample Received @ Lab:00/07/07/1805 | Date Analyses Completed:00/07/07

System Name:COSUMNES RIVER INDIAN ASSOC | System Number: 3400168

Name or Number of Sample Source:MAIN WELL

* User ID: 34C Station Number: 07N/06E-36L01 M *

* Date/Time of Sample: |00|07|07|1545| Laboratory Code: 1080 *

* YY MM DD TTTT YY MM DD *

* Date Analysis completed: |00|07|07| *

* Submitted by:_____ Phone #:_____ *

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3) (mg/L)	00900		
	mg/L	Calcium (Ca) (mg/L)	00916		
	mg/L	Magnesium (Mg) (mg/L)	00927		
	mg/L	Sodium (NA) (mg/L)	00929		
	mg/L	Potassium (K) (mg/L)	00937		
Total Cations		Meq/L Value:			
	mg/L	Total Alkalinity (AS CaCO3) (mg/L)	00410		
	mg/L	Hydroxide (OH) (mg/L)	71830		
	mg/L	Carbonate (CO3) (mg/L)	00445		
	mg/L	Bicarbonate (HCO3) (mg/L)	00440		
*	mg/L+	Sulfate (SO4) (mg/L)	00945		.5
*	mg/L+	Chloride (Cl) (mg/L)	00940		
45	mg/L	Nitrate (as NO3) (mg/L)	71850	13	2.0
**	mg/L	Fluoride (F) Temp. Depend. (mg/L)	00951		.1
Total Anions		Meq/L Value:			
	Std.Units+	PH (Laboratory) (Std.Units)	00403		
***	umho/cm+	Specific Conductance (E.C.) (umho/cm)	00095		
****	mg/L+	Total Filterable Residue@180C(TDS) (mg/L)	70300		
	Units	Apparent Color (Unfiltered) (Units)	00081		
	TON	Odor Threshold at 60 C (TON)	00086		
	NTU	Lab Turbidity (NTU)	82079		
0.5	mg/L+	MBAS (mg/L)	38260		

* 250-500-600 ** 0.6-1.7 *** 900-1600-2200 **** 500-1000-1500

CLS LABS
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742
ORGANIC CHEMICAL ANALYSIS (3/96)

Date of Report: 03/02/99 Sample ID No.R0021-1A
Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:
Name of Sampler:Benjie Employed By:CLS Labs
Date/Time Sample Collected: 99/02/12/1411 Date/Time Sample Received @ Lab: 99/02/12/1500 Date Analyses Completed: 99/02/15

System Name: COSUMNES RIVER INDIAN ASSOC System Number: 3400168
Name or Number of Sample Source: WELL A

* User ID: 34C Station Number: 07N/06E-36L01 M *
* Date/Time of Sample: |99|02|12|1411| Laboratory Code: 1080 *
* YY MM DD TTTT YY MM DD *
* Date Analysis Completed: |99|02|15| *
* Submitted by:_____ Phone #:_____ *

PAGE 1 OF 1 UNREGULATED ORGANIC CHEMICALS

TEST METHOD	CHEMICAL ALL CHEMICALS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	DLR ug/L
	Methyl tert-Butyl Ether (MTBE)	A-030	ND		5.0

CLS LABS EDT
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742

GENERAL MINERAL & PHYSICAL, & INORGANIC ANALYSIS (4/95)

Date of Report: 09/09/99 Sample ID No.R4310-1A
Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:
Name of Sampler:BENJIE Employed By:CLS
Date/Time Sample Collected: 99/09/03/0915 Date/Time Sample Received @ Lab: 99/09/03/0930 Date Analyses Completed: 99/09/03

System Name: COSUMNES RIVER INDIAN ASSOC System Number: 3400168
Name or Number of Sample Source: WELL A

* User ID: 34C Station Number: 07N/06E-36L01 M *
* Date/Time of Sample: |99|09|03|0915| Laboratory Code: 1080 *
* YY MM DD TTTT YY MM DD *
* Date Analysis Completed: |99|09|03| *
* Submitted by: Phone #: *

PAGE 1 OF 1

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900		
	mg/L	Calcium (Ca)	00916		
	mg/L	Magnesium (Mg)	00927		
	mg/L	Sodium (NA)	00929		
	mg/L	Potassium (K)	00937		
Total Cations		Meq/L Value: 0.0			
	mg/L	Total Alkalinity (AS CaCO3)	00410		
	mg/L	Hydroxide (OH)	71830		
	mg/L	Carbonate (CO3)	00445		
	mg/L	Bicarbonate (HCO3)	00440		
*	mg/L+	Sulfate (SO4)	00945		0.5
*	mg/L+	Chloride (Cl)	00940		
45	mg/L	Nitrate (as NO3)	71850	.19	2.0
**	mg/L	Fluoride (F) Temp. Depend.	00951		0.1
Total Anions		Meq/L Value: 0.3			
	Std.Units+	PH (Laboratory)	00403		
***	umho/cm+	Specific Conductance (E.C.)	00095		
****	mg/L+	Total Filterable Residue at 180C (TDS)	70300		
	Units	Apparent Color (Unfiltered)	00081		
	TON	Odor Threshold at 60 C	00086		
	NTU	Lab Turbidity	82079		
0.5	mg/L+	MBAS	38260		

* 250-500-600 ** 1.4-2.4 *** 900-1600-2200 **** 500-1000-1500

+ Indicates Secondary Drinking Water Standards

CLS LABS
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742
ORGANIC CHEMICAL ANALYSIS (3/96)

Date of Report: 03/02/99 Sample ID No.R0021-1A
Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:
Name of Sampler:Benjie Employed By:CLS Labs
Date/Time Sample Collected: 99/02/12/1411 Date/Time Sample Received @ Lab: 99/02/12/1500 Date Analyses Completed: 99/02/15

System Name: COSUMNES RIVER INDIAN ASSOC
System Number: 3400168
Name or Number of Sample Source: WELL A

****

* User ID: 34C Station Number: 07N/06E-36L01 M *
* Date/Time of Sample: |99|02|12|1411| Laboratory Code: 1080 *
* YY MM DD TTTT YY MM DD *
* Date Analysis Completed: |99|02|15| *
* Submitted by:_____ Phone #:_____ *

****

PAGE 1 OF 1 UNREGULATED ORGANIC CHEMICALS

TEST METHOD	CHEMICAL ALL CHEMICALS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	DLR ug/L
	Methyl tert-Butyl Ether (MTBE)	A-030	ND		5.0

CLS LABS EDT
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742

GENERAL MINERAL & PHYSICAL, & INORGANIC ANALYSIS (4/95)

Date of Report: 07/30/98 Sample ID No.P5716-1A
Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:
Name of Sampler:JOHN HINTON Employed By:CLS
Date/Time Sample Collected: 98/07/23/1238 Date/Time Sample Received @ Lab: 98/07/24/0830 Date Analyses Completed: 98/07/24

System Name: COSUMNES_RIVER_INDIAN_ASSOC
System Number: 3400168
Name or Number of Sample Source: WELL A

* User ID: 34C Station Number: 07N/06E-36L01 M *
* Date/Time of Sample: |98|07|23|1238| (YY MM DD TTTT) Laboratory Code: 1080 *
* YY MM DD *
* Date Analysis Completed: |98|07|24| *
* Submitted by: Phone #: *

PAGE 1 OF 1

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900		
	mg/L	Calcium (Ca)	00916		
	mg/L	Magnesium (Mg)	00927		
	mg/L	Sodium (NA)	00929		
	mg/L	Potassium (K)	00937		
Total Cations		Meq/L Value: 0.0			
	mg/L	Total Alkalinity (AS CaCO3)	00410		
	mg/L	Hydroxide (OH)	71830		
	mg/L	Carbonate (CO3)	00445		
	mg/L	Bicarbonate (HCO3)	00440		
*	mg/L+	Sulfate (SO4)	00945		0.5
*	mg/L+	Chloride (Cl)	00940		
45	mg/L	Nitrate (as NO3)	71850	14	2.0
**	mg/L	Fluoride (F) Temp. Depend.	00951		0.1
Total Anions		Meq/L Value: 0.2			
	Std.Units+	PH (Laboratory)	00403		
***	umho/cm+	Specific Conductance (E.C.)	00095		
****	mg/L+	Total Filterable Residue at 180C (TDS)	70300		
	Units	Apparent Color (Unfiltered)	00081		
	TON	Odor Threshold at 60 C	00086		
	NTU	Lab Turbidity	82079		
0.5	mg/L+	MBAS	38260		

* 250-500-600 ** 1.4-2.4 *** 900-1600-2200 **** 500-1000-1500

+ Indicates Secondary Drinking Water Standards

CALIFORNIA LABORATORY SERVICES EDT
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742

GENERAL MINERAL & PHYSICAL, & INORGANIC ANALYSIS (4/95)

Date of Report: 02/03/97 Sample ID No.N6057-1A
Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:
Name of Sampler:JOHN HINTON Employed By:CLS
Date/Time Sample Collected: 97/01/22/1440 Date/Time Sample Received @ Lab: 97/01/22/1600 Date Analyses Completed: 97/01/23

System Name: COSUMNES RIVER INDIAN ASSOC System Number: 3400168
Name or Number of Sample Source: WELL A

****

* User ID: 34C Station Number: 07N/06E-36L01 M *
* Date/Time of Sample: |97|01|22|1440| Laboratory Code: 1080 *
* YY MM DD TTTT YY MM DD *
* Date Analysis Completed: |97|01|23| *
* Submitted by: Phone #: *

****

PAGE 1 OF 1

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900		
	mg/L	Calcium (Ca)	00916		
	mg/L	Magnesium (Mg)	00927		
	mg/L	Sodium (NA)	00929		
	mg/L	Potassium (K)	00937		
Total Cations	Meq/L	Value: 0.0			
	mg/L	Total Alkalinity (AS CaCO3)	00410		
	mg/L	Hydroxide (OH)	71830		
	mg/L	Carbonate (CO3)	00445		
	mg/L	Bicarbonate (HCO3)	00440		
*	mg/L+	Sulfate (SO4)	00945		0.5
*	mg/L+	Chloride (Cl)	00940		
45	mg/L	Nitrate (as NO3)	71850	15	2.0
**	mg/L	Fluoride (F) Temp. Depend.	00951		0.1
Total Anions	Meq/L	Value: 0.2			
	Std.Units+	PH (Laboratory)	00403		
***	umho/cm+	Specific Conductance (E.C.)	00095		
****	mg/L+	Total Filterable Residue at 180C (TDS)	70300		
	Units	Apparent Color (Unfiltered)	00081		
	TON	Odor Threshold at 60 C	00086		
	NTU	Lab Turbidity	82079		
0.5	mg/L+	MBAS	38260		

* 250-500-600 ** 1.4-2.4 *** 900-1600-2200 **** 500-1000-1500

+ Indicates Secondary Drinking Water Standards

CALIFORNIA LABORATORY SERVICES EDT
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742

GENERAL MINERAL & PHYSICAL, & INORGANIC ANALYSIS (4/95)

Date of Report: 02/03/97 Sample ID No.N6057-1A

Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:

Name of Sampler:JOHN HINTON Employed By:CLS

Date/Time Sample Collected: 97/01/22/1440	Date/Time Sample Received @ Lab: 97/01/22/1600	Date Analyses Completed: 97/01/23

System Name: COSUMNES RIVER INDIAN ASSOC

System Number: 3400168

Name or Number of Sample Source: WELL A

****

* User ID: 34C Station Number: 07N/06E-36L01 M *

* Date/Time of Sample: |97|01|22|1440| Laboratory Code: 1080 *

* YY MM DD TTTT YY MM DD *

* Date Analysis Completed: |97|01|23| *

* Submitted by:_____ Phone #:_____ *

****

PAGE 1 OF 1 ADDITIONAL ANALYSES

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
1000	ug/L	Nitrite as Nitrogen(N)	00620	ND	400

\+ Indicates Secondary Drinking Water Standards

CALIFORNIA LABORATORY SERVICES
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742

EDT

GENERAL MINERAL & PHYSICAL, & INORGANIC ANALYSIS (4/95)

Date of Report: 10/03/95 Sample ID No.N0041-1A

Laboratory Signature Lab

Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:

Name of Sampler:SCOTT FURNAS Employed By:CLS

Date/Time Sample Collected: 95/09/12/1241 | Date/Time Sample Received @ Lab: 95/09/12/1407 | Date Analyses Completed: 95/09/13

System Name: COSUMNES RIVER INDIAN ASSOC

System Number: 3400168

Name or Number of Sample Source: WELL A

User ID: 34C

Station Number: 07N/06E-36L01 M

Date/Time of Sample: |95|09|12|1241| (YY MM DD TTTT)

Laboratory Code: 1080 (YY MM DD)

Date Analysis Completed: |95|09|13|

Submitted by: Phone #:

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900	180	
	mg/L	Calcium (Ca)	00916	33	
	mg/L	Magnesium (Mg)	00927	23	
	mg/L	Sodium (NA)	00929	23	
	mg/L	Potassium (K)	00937	2.5	
Total Cations		Meq/L Value: 4.6			
	mg/L	Total Alkalinity (AS CaCO3)	00410	150	
	mg/L	Hydroxide (OH)	71830	ND	
	mg/L	Carbonate (CO3)	00445	ND	
	mg/L	Bicarbonate (HCO3)	00440	150	
*	mg/L+	Sulfate (SO4)	00945	32	0.5
*	mg/L+	Chloride (Cl)	00940	10	
45	mg/L	Nitrate (as NO3)	71850	20	2.0
**	mg/L	Fluoride (F) Temp. Depend.	00951	ND	0.1
Total Anions		Meq/L Value: 3.7			
	Std.Units+	PH (Laboratory)	00403	6.7	
***	umho/cm+	Specific Conductance (E.C.)	00095	300	
****	mg/L+	Total Filterable Residue at 180C (TDS)	70300	300	
	Units	Apparent Color (Unfiltered)	00081		
	TON	Odor Threshold at 60 C	00086		
	NTU	Lab Turbidity	82079		
0.5	mg/L+	MBAS	38260	ND	

* 250-500-600 ** 1.4-2.4 *** 900-1600-2200 **** 500-1000-1500

INORGANIC CHEMICALS

N0041-1A

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
1000	ug/L+	Copper (Cu)	01042	ND	50.0
300	ug/L+	Iron (Fe)	01045	ND	100.0
50	ug/L+	Manganese (Mn)	01055	ND	30.0
5000	ug/L	Zinc (Zn)	01092	ND	50.0

+ Indicates Secondary Drinking Water Standards

CALIFORNIA LABORATORY SERVICES
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742

EDT

GENERAL MINERAL & PHYSICAL, & INORGANIC ANALYSIS (4/95)

Date of Report: 10/03/95 Sample ID No.N0041-1C

Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:

Name of Sampler:SCOTT FURNAS Employed By:CLS

Date/Time Sample Collected: 95/09/12/1241 | Date/Time Sample Received @ Lab: 95/09/12/1407 | Date Analyses Completed: 95/09/13

System Name: COSUMNES RIVER INDIAN ASSOC | System Number: 3400168

Name or Number of Sample Source: WELL A

* User ID: 34C | Station Number: 07N/06E-36L01 M *

* Date/Time of Sample: |95|09|12|1241| (YY MM DD TTTT) | Laboratory Code: 1080 * (YY MM DD)

* | Date Analysis Completed: |95|09|13| *

* Submitted by:_____ | Phone #:_____ *

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900		
	mg/L	Calcium (Ca)	00916		
	mg/L	Magnesium (Mg)	00927		
	mg/L	Sodium (NA)	00929		
	mg/L	Potassium (K)	00937		
Total Cations		Meq/L Value: 0.0			
	mg/L	Total Alkalinity (AS CaCO3)	00410		
	mg/L	Hydroxide (OH)	71830		
	mg/L	Carbonate (CO3)	00445		
	mg/L	Bicarbonate (HCO3)	00440		
*	mg/L+	Sulfate (SO4)	00945		0.5
*	mg/L+	Chloride (Cl)	00940		
45	mg/L	Nitrate (as NO3)	71850		2.0
**	mg/L	Fluoride (F) Temp. Depend.	00951		0.1
Total Anions		Meq/L Value: 0.0			
	Std.Units+	PH (Laboratory)	00403		
***	umho/cm+	Specific Conductance (E.C.)	00095		
****	mg/L+	Total Filterable Residue at 180C (TDS)	70300		
	Units	Apparent Color (Unfiltered)	00081	0	
	TON	Odor Threshold at 60 C	00086	1	
	NTU	Lab Turbidity	82079	ND	
0.5	mg/L+	MBAS	38260		

* 250-500-600 ** 1.4-2.4 *** 900-1600-2200 **** 500-1000-1500

\+ Indicates Secondary Drinking Water Standards

CALIFORNIA LABORATORY SERVICES
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742

EDT

GENERAL MINERAL & PHYSICAL, & INORGANIC ANALYSIS (4/95)

Date of Report: 10/03/95 Sample ID No.N0041-1A

Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:

Name of Sampler:SCOTT FURNAS Employed By:CLS

Date/Time Sample Collected:	Date/Time Sample Received @ Lab:	Date Analyses Completed:
95/09/12/1241	95/09/12/1407	95/10/02

System Name: COSUMNES RIVER INDIAN ASSOC

System Number: 3400168

Name or Number of Sample Source: WELL A

* User ID: 34C Station Number: 07N/06E-36L01 M *

* Date/Time of Sample: |95|09|12|1241| Laboratory Code: 1080 *
YY MM DD TTTT YY MM DD

* Date Analysis Completed: |95|10|02| *

* Submitted by:_____ Phone #:_____ *

PAGE 1 OF 1

INORGANIC CHEMICALS

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
1000	ug/L	Aluminum (Al)	01105	ND	50.0
6	ug/L	Antimony	01097	ND	6.0
50	ug/L	Arsenic (As)	01002	ND	2.0
1000	ug/L	Barium (Ba)	01007	110	100.0
4	ug/L	Beryllium	01012	ND	1.0
5	ug/L	Cadmium (Cd)	01027	ND	1.0
50	ug/L	Chromium (Total Cr)	01034	ND	10.0
1000	ug/L+	Copper (Cu)	01042	ND	50.0
300	ug/L+	Iron (Fe)	01045	ND	100.0
	ug/L	Lead (Pb)	01051	ND	5.0
50	ug/L+	Manganese (Mn)	01055	ND	30.0
2	ug/L	Mercury (Hg)	71900	ND	1.0
100	ug/L	Nickel	01067	ND	10.0
50	ug/L	Selenium (Se)	01147	ND	5.0
100	ug/L+	Silver (Ag)	01077	ND	10.0
2	ug/L	Thallium	01059	ND	1.0
5000	ug/L	Zinc (Zn)	01092	ND	50.0

+ Indicates Secondary Drinking Water Standards

CALIFORNIA LABORATORY SERVICES
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742

EDT

GENERAL MINERAL & PHYSICAL, & INORGANIC ANALYSIS (4/95)

Date of Report: 10/03/95 Sample ID No.N0041-1B

Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:

Name of Sampler:SCOTT FURNAS Employed By:CLS

Date/Time Sample Collected: 95/09/12/1241 | Date/Time Sample Received @ Lab: 95/09/12/1407 | Date Analyses Completed: 95/09/13

System Name: COSUMNES RIVER INDIAN ASSOC

System Number: 3400168

Name or Number of Sample Source: WELL A

* User ID: 34C Station Number: 07N/06E-36L01 M *
* Date/Time of Sample: |95|09|12|1241| (YY MM DD TTTT) Laboratory Code: 1080 *
* YY MM DD *
* Date Analysis Completed: |95|09|13| *
* Submitted by:_____ Phone #:_____ *

PAGE 1 OF 1

ADDITIONAL ANALYSES

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
1000	ug/L	Nitrite as Nitrogen(N)	00620	ND	400

+ Indicates Secondary Drinking Water Standards

CALIFORNIA LABORATORY SERVICES
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742

EDT

ORGANIC CHEMICAL ANALYSIS (4/95)

Date of Report: 10/03/95 Sample ID No.N0041-1D

Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:

Name of Sampler:SCOTT FURNAS Employed By:CLS

Date/Time Sample Collected: 95/09/12/1241 | Date/Time Sample Received @ Lab: 95/09/12/1407 | Date Analyses Completed: 95/09/15

System Name: COSUMNES RIVER INDIAN ASSOC | System Number: 3400168

Name or Number of Sample Source: WELL A

* User ID: 34C Station Number: 07N/06E-36L01 M *
* Date/Time of Sample: |95|09|12|1241| Laboratory Code: 1080 *
* YY MM DD TTTT YY MM DD *
* Date Analysis Completed: |95|09|15| *
* Submitted by:_____ Phone #:_____ *

PAGE 1 OF 2 REGULATED ORGANIC CHEMICALS

TEST METHOD	CHEMICAL ALL CHEMICALS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	DLR ug/L
502.2	Bromodichloromethane	32101	ND		0.5
502.2	Bromoform	32104	ND		0.5
502.2	Chloroform (Trichloromethane)	32106	ND		0.5
502.2	Dibromochloromethane	32105	ND		0.5
502.2	Total Trihalomethanes (THM'S/ TTHM)	82080	ND	100	0.5
502.2	Benzene	34030	ND	1	0.5
502.2	Carbon Tetrachloride	32102	ND	.5	0.5
502.2	1,2-Dichlorobenzene (o-DCB)	34536	ND	600	0.5
502.2	1,4-Dichlorobenzene (p-DCB)	34571	ND	5	0.5
502.2	1,1-Dichloroethane (1,1-DCA)	34496	ND	5	0.5
502.2	1,2-Dichloroethane (1,2-DCA)	34531	ND	.5	0.5
502.2	1,1-Dichloroethylene (1,1-DCE)	34501	ND	6	0.5
502.2	cis-1,2-Dichloroethylene (c-1,2-DCE)	77093	ND	6	0.5
502.2	trans-1,2-Dichloroethylene (t-1,2-DCE)	34546	ND	10	0.5
502.2	Dichloromethane (Methylene Chloride)	34423	ND	5	0.5
502.2	1,2-Dichloropropane	34541	ND	5	0.5
502.2	Total 1,3-Dichloropropene	34561	ND	.5	0.5
502.2	Ethyl Benzene	34371	ND	700	0.5
502.2	Monochlorobenzene (Chlorobenzene)	34301	ND	70	0.5
502.2	Styrene	77128	ND	100	0.5
502.2	1,1,2,2-Tetrachloroethane	34516	ND	1	0.5
502.2	Tetrachloroethylene (PCE)	34475	ND	5	0.5
502.2	Toluene	34010	ND	150	0.5
502.2	1,2,4-Trichlorobenzene	34551	ND	70	0.5
502.2	1,1,1-Trichloroethane (1,1,1-TCA)	34506	ND	200	0.5
502.2	1,1,2-Trichloroethane (1,1,2-TCA)	34511	ND	5	0.5

REGULATED ORGANIC CHEMICALS CONTINUED N0041-1D

TEST METHOD	CHEMICAL ALL CHEMICALS REPORTED ug/L	ENTRY #	ANALYSES RESULTS	MCL ug/L	DLR ug/L
502.2	Trichloroethylene (TCE)	39180	ND	5	0.5
502.2	Trichlorofluoromethane (FREON 11)	34488	ND	150	5.0
502.2	Trichlorotrifluoroethane (FREON 113)	81611	ND	1200	10.0
502.2	Vinyl Chloride (VC)	39175	ND	.5	0.5
502.2	m,p-Xylene	A-014	ND		0.5
502.2	o-Xylene	77135	ND		0.5
502.2	Total Xylenes (m,p, & o)	81551	ND	1750	0.5
	UNREGULATED ORGANIC CHEMICALS				
502.2	Bromobenzene	81555	ND		0.5
502.2	Bromochloromethane	A-012	ND		0.5
502.2	Bromomethane (Methyl Bromide)	34413	ND		0.5
502.2	n-Butylbenzene	A-010	ND		0.5
502.2	sec-Butylbenzene	77350	ND		0.5
502.2	tert-Butylbenzene	77353	ND		0.5
502.2	Chloroethane	34311	ND		0.5
502.2	2-Chloroethylvinyl Ether	34576	ND		1.0
502.2	Chloromethane (Methyl Chloride)	34418	ND		0.5
502.2	2-Chlorotoluene	A-008	ND		0.5
502.2	4-Chlorotoluene	A-009	ND		0.5
502.2	Dibromomethane	77596	ND		0.5
502.2	1,3-Dichlorobenzene (m-DCB)	34566	ND		0.5
502.2	Dichlorodifluoromethane	34668	ND		1.0
502.2	1,3-Dichloropropane	77173	ND		0.5
502.2	2,2-Dichloropropane	77170	ND		0.5
502.2	1,1-Dichloropropene	77168	ND		0.5
502.2	Hexachlorobutadiene	34391	ND		0.5
502.2	Isopropylbenzene (Cumene)	77223	ND		0.5
502.2	p-Isopropyltoluene	A-011	ND		0.5
502.2	Naphthalene	34696	ND		0.5
502.2	n-Propylbenzene	77224	ND		0.5
502.2	1,1,1,2-Tetrachloroethane	77562	ND		0.5
502.2	1,2,3-Trichlorobenzene	77613	ND		0.5
502.2	1,2,3-Trichloropropane	77443	ND		0.5
502.2	1,2,4-Trimethylbenzene	77222	ND		0.5
502.2	1,3,5-Trimethylbenzene	77226	ND		0.5

CALIFORNIA LABORATORY SERVICES
3249 FITZGERALD ROAD
RANCHO CORDOVA, CA 95742

EDT

RADIOACTIVITY ANALYSIS (4/95)

The radioactivity was analyzed by Clinical Laboratory of San Bernardino
Date of Report: 09/28/95 Sample ID No.N0041
Laboratory Signature Lab
Name: CALIFORNIA LABORATORY SERVICES (A E LAB) Director:
Name of Sampler:Scott Furnas Employed By:CLS

Date/Time Sample Collected:	Date/Time Sample Received @ Lab:	Date Analyses Completed:
95/09/12/1241	95/09/12/1407	95/09/22

System Name: COSUMNES RIVER INDIAN ASSOC
System Number: 3400168
Name or Number of Sample Source: WELL A

* User ID: 34C
* Date/Time of Sample: |95|09|12|1241| (YY MM DD TTTT)
* Submitted by:_____
Station Number: 07N/06E-36L01 M
Laboratory Code: 1080
Date Analysis Completed: |95|09|22| (YY MM DD)
Phone #:_____

MCL	REPORT UNITS	CHEMICAL	STORET CODE	ANALYSES RESULTS	DLR
15	pCi/l	Total Alpha	01501	0.8	
	pCi/l	Total Alpha Counting Error	01502	1.1	
50	pCi/l	Total Beta	03501		4.0
	pCi/l	Total Beta Counting Error	03502		
20	pCi/l	Natural Uranium	28012		2.0
	pCi/l	Natural Uranium Counting Error	A-028		
	pCi/l	Total Radium 226	09501		.5
	pCi/l	Total Radium 226 Counting Error	09502		
	pCi/l	Total Radium 228	11501		.5
	pCi/l	Total Radium 228 Counting Error	11502		
5	pCi/l	Ra 226 + Ra 228	11503		
	pCi/l	Ra 226 + Ra 228 Counting Error	11504		
	pCi/l	Total Radon 222	82303		100.0
	pCi/l	Total Radon 222 Counting Error	82302		
20000	pCi/l	Total Tritium	07000		1.0
	pCi/l	Total Tritium Counting Error	07001		
8	pCi/l	Total Strontium 90	13501		2.0
	pCi/l	Total Strontium 90 Counting Error	13502		

CLINICAL LABORATORY OF SAN BERNARDINO, INC. EX
21881 BARTON ROAD
GRAND TERRACE, CA 92313

RADIOACTIVITY ANALYSIS (4/95)

Date of Report: 09/25/95 Sample ID No. 95-8777
Laboratory Signature Lab
Name: CLINICAL LABORATORIES OF SAN BERNARDINO Director:
Name of Sampler:NOT GIVEN Employed By:CLS N0041 9301 RANCHERIA
Date/Time Sample Collected: 95/09/12/0000 | Date/Time Sample Received @ Lab: 95/09/13/1700 | Date Analyses Completed: 95/09/22

System Name: CALIFORNIA LABORATORY SERVICES
System Number: 3401299
Name or Number of Sample Source: UNIDENTIFIED

* User ID: 34C Station Number:
* Date/Time of Sample: |95|09|12|0000| (YY MM DD TTTT) Laboratory Code: 3761 (YY MM DD)
* Date Analysis Completed: |95|09|22|
* Submitted by: Phone #:

MCL	REPORT UNITS	CHEMICAL	STORET CODE	ANALYSES RESULTS	DLR
15	pCi/l	Total Alpha	01501	0.8	
	pCi/l	Total Alpha Counting Error	01502	1.1	
50	pCi/l	Total Beta	03501		4.0
	pCi/l	Total Beta Counting Error	03502		
20	pCi/l	Natural Uranium	28012		2.0
	pCi/l	Natural Uranium Counting Error	A-028		
	pCi/l	Total Radium 226	09501		.5
	pCi/l	Total Radium 226 Counting Error	09502		
	pCi/l	Total Radium 228	11501		.5
	pCi/l	Total Radium 228 Counting Error	11502		
5	pCi/l	Ra 226 + Ra 228	11503		
	pCi/l	Ra 226 + Ra 228 Counting Error	11504		
	pCi/l	Total Radon 222	82303		100.0
	pCi/l	Total Radon 222 Counting Error	82302		
20000	pCi/l	Total Tritium	07000		1.0
	pCi/l	Total Tritium Counting Error	07001		
8	pCi/l	Total Strontium 90	13501		2.0
	pCi/l	Total Strontium 90 Counting Error	13502		

EX

GENERAL MINERAL & PHYSICAL, & INORGANIC ANALYSIS (4/95)

Date of Report: 09/26/95 Sample ID No. AE19095

Laboratory Name: ANLAB (ANALYTICAL LABS) Signature Lab Director: P Bushnell

Name of Sampler: NOT SPECIFIED Employed By: NOT SPECIFIED

Date/Time Sample Collected: 95/09/12/2000 Date/Time Sample Received @ Lab: 95/09/13/1003 Date Analyses Completed: 95/09/13

System Name: COUNTRYSIDE ORTVE INN System Number:

Name or Number of Sample Source: INSIDE

* User ID: TEN Station Number: *

* Date/Time of Sample: |95|09|12|2000| Laboratory Code: 5991 *

* YY MM DD TTTT YY MM DD *

* Date Analysis Completed: |95|09|13| *

* Submitted by: Phone #: *

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
	mg/L	Total Hardness (as CaCO3)	00900		
	mg/L	Calcium (Ca)	00916		
	mg/L	Magnesium (Mg)	00927		
	mg/L	Sodium (NA)	00929		
	mg/L	Potassium (K)	00937		
Total Cations		Meq/L Value: 0.0			
	mg/L	Total Alkalinity (AS CaCO3)	00410		
	mg/L	Hydroxide (OH)	71830		
	mg/L	Carbonate (CO3)	00445		
	mg/L	Bicarbonate (HCO3)	00440		
*	mg/L+	Sulfate (SO4)	00945		0.5
*	mg/L+	Chloride (Cl)	00940		
45	mg/L	Nitrate (as NO3)	71850	7.4	2.0
**	mg/L	Fluoride (F) Temp. Depend.	00951		0.1
Total Anions		Meq/L Value: 0.0			
	Std.Units+	PH (Laboratory)	00403		
***	umho/cm+	Specific Conductance (E.C.)	00095		
****	mg/L+	Total Filterable Residue at 180C (TDS)	70300		
	Units	Apparent Color (Unfiltered)	00081		
	TON	Odor Threshold at 60 C	00086		
	NTU	Lab Turbidity	82079		
0.5	mg/L+	MBAS	38260		

* 250-500-600 ** 1.4-2.4 *** 900-1600-2200 **** 500-1000-1500

INORGANIC CHEMICALS

AE19095

MCL	REPORTING UNITS	CHEMICAL	ENTRY #	ANALYSES RESULTS	DLR
1000	ug/L	Aluminum (Al)	01105		50.0
6	ug/L	Antimony	01097		6.0
50	ug/L	Arsenic (As)	01002		2.0
1000	ug/L	Barium (Ba)	01007		100.0
4	ug/L	Beryllium	01012		1.0
5	ug/L	Cadmium (Cd)	01027		1.0
50	ug/L	Chromium (Total Cr)	01034		10.0
1000	ug/L+	Copper (Cu)	01042		50.0
300	ug/L+	Iron (Fe)	01045		100.0
	ug/L	Lead (Pb)	01051		5.0
50	ug/L+	Manganese (Mn)	01055		30.0
2	ug/L	Mercury (Hg)	71900		1.0
100	ug/L	Nickel	01067		10.0
50	ug/L	Selenium (Se)	01147		5.0
100	ug/L+	Silver (Ag)	01077		10.0
2	ug/L	Thallium	01059		1.0
5000	ug/L	Zinc (Zn)	01092		50.0
		ADDITIONAL ANALYSES			
	NTU	Field Turbidity	82078		
	C	Source Temperature C	00010		
		Langelier Index Source Temp.	71814		
		Langelier Index at 60 C	71813		
	Std. Units	Field PH	00400		
		Agressiveness Index	82383		
	mg/L	Silica	00955		
	mg/L	Phosphate	00650		
	mg/L	Iodide	71865		
		Sodium Absorption Ratio	00931		
7	MFL	Asbestos	81855		0.20
	ug/L	Boron	01020		
	ug/L	Nitrate as Nitrogen(N)	00618	1700	400
10000	ug/L	Nitrate + Nitrite as Nitrogen(N)	A-029	1700	400
1000	ug/L	Nitrite as Nitrogen(N)	00620	<150	400
200	ug/L	Cyanide	01291		100.0
	mg/L	Ammonia	00612		
	ug/L	Lithium	01132		
	mg/L	Bromide	82298		
	mg/L	Bromate	A-027		

+ Indicates Secondary Drinking Water Standards

Water Data Library

Use the map below to locate monitoring stations. You can find an area of interest if you zoom and pan the map. Quickly find an area searching for named features on a map such as the name of a city, park, landmark, lake, water feature, or zip code within California. Once at the area of interest, select the desired Site Type and click the "Refresh Map" button to show monitoring stations in the area. Additional searches by data type are possible by clicking the links on the left. For help on these and other ways to find your data click here.

WDL STATION MAP

Location Search

To find monitoring stations for a specific area, enter the placename or zip code into the text box below

wilton, ca

Site Type

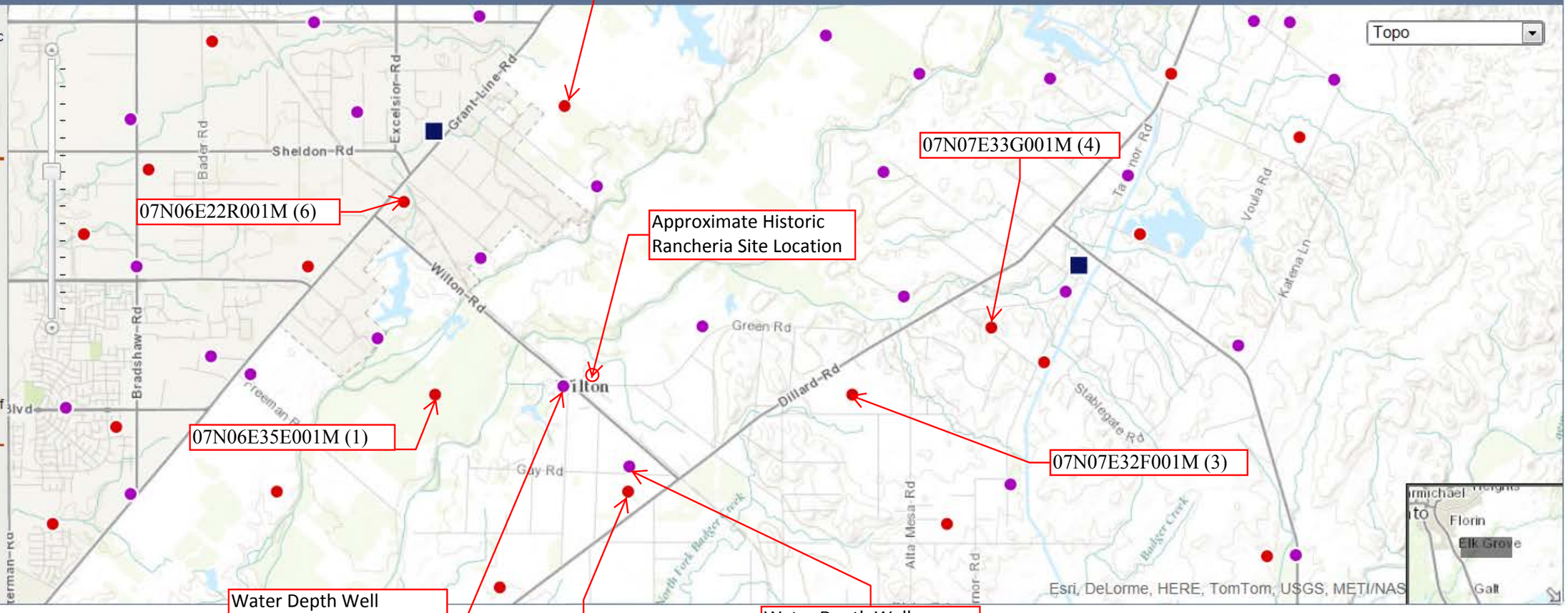
Select the desired site type using the checkboxes

- Groundwater Level
- Water Quality
  - Include Historic Data
- Continuous Data
- = Multiple Stations at one Location
- = Cluster, showing number of stations

Cursor Coordinates (WGS84)

Lat: -121.2344, Long: 38.4538

0 0.5 1mi



HISTORIC RANCHERIA SITE NEIGHBORING WELL WATER QUALITY SUMMARY

Water Quality Source: Department of Public Resources Water Data Library
Source Codes: 07N06E35E001M, 06N06E01B002M, 07N07E32F001M, 07N07E33G001M,07N06E24D001M, 07N06E22R001M
Source Proximity to Historic Rancheria Site: 0.9 to 3 miles
Date of Water Quality Reports: 1955 through 1989

Chemical	Average Conc	Max Conc	Max Conc in Well #	Units	California MCL	Latest Test Date
Nitrate (as NO3)	6.5	12	4	mg/L (ppm)	45	1989
Arsenic	< 1	< 1	n/a	ug/L (ppb)	10	1982
Chromium	<0.001	<0.001	n/a	ug/L (ppb)	50	1960
Fluoride	200	400	6	ug/L (ppb)	2000	1982
Chloride	11.3	17	6	mg/L (ppm)	250	1989
Copper	10	10	6	ug/L (ppb)	1000	1982
Iron	< 1	< 1	n/a	ug/L (ppb)	300	1982
Sulfate	7.5	34	1	mg/L (ppm)	250	1989
Total Dissolved Solids (TDS)	225	286	1	mg/L (ppm)	500	1989
Zinc	0.3	0.3	n/a	mg/L (ppm)	5	1960
Lead	< 1	< 1	n/a	ug/L (ppb)	15	1960
Boron	0.09	0.09	1	mg/L (ppm)	3	1989
Calcium	19.25	19.25	1	mg/L (ppm)		1982
Magnesium	10	26	1	mg/L (ppm)		1989
Silica	70.8	79	6	mg/L (ppm)	100	1982
Sodium	15.3	20	2	mg/L (ppm)	500	1989
Total Alkalinity (as CaCO3)	106.4	157	1	mg/L (ppm)		1989
Total Hardness	101.4	134	6	mg/L (ppm)		1989

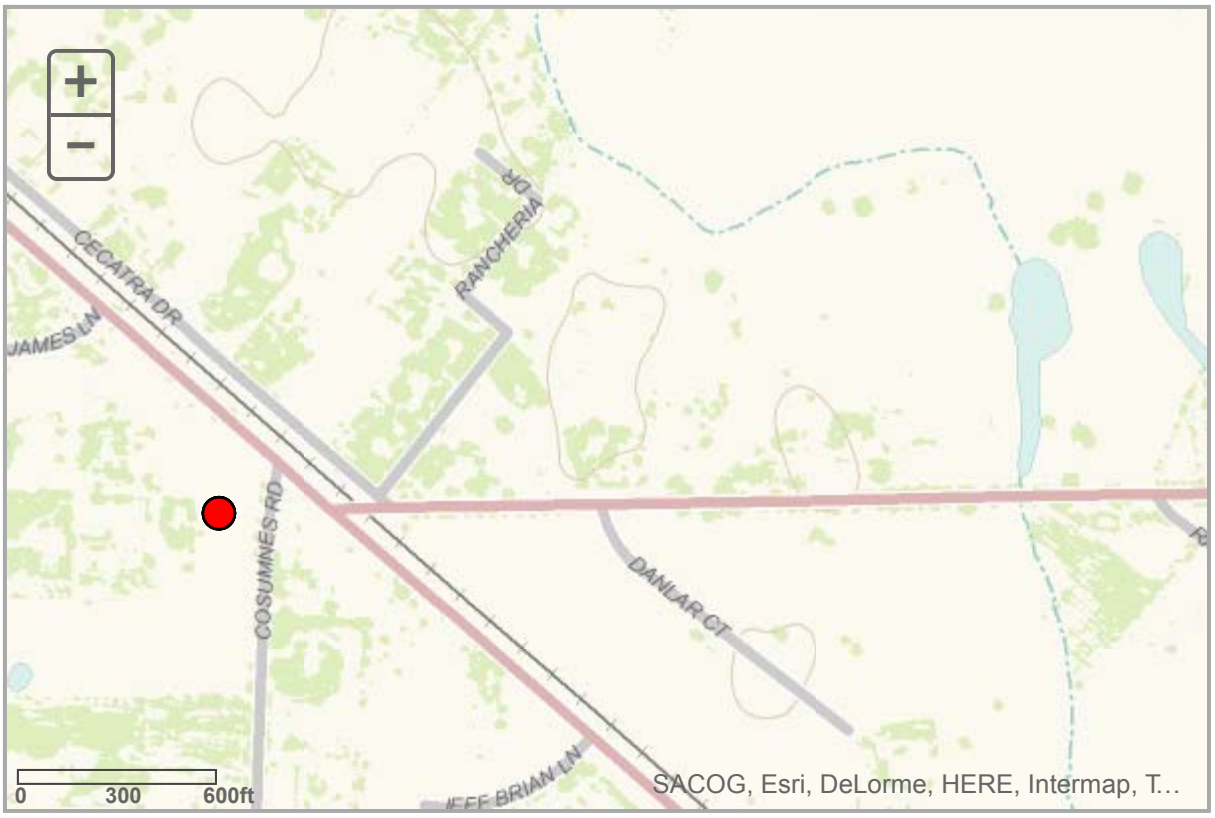
Groundwater Levels for Station 384117N1212735W001

Data for your selected well is shown in the tabbed interface below. To view data managed in the updated WDL tables, including data collected under the CASGEM program, click the "Recent Groundwater Level Data" tab. To view data stored in the former WDL tables, click the "Historical Groundwater Level Data" tab. To download the data in CSV format, click the "Download CSV File" button on the respective tab. Please note that the vertical datum for "recent" measurements is NAVD88, while the vertical datum for "historical" measurements is NGVD29. To change your well selection criteria, click the "Perform a New Well Search" button.

Station Data | Recent Groundwater Level Data | Historical Groundwater Level Data

State Well Number: 07N06E36P002M
Local Well ID:
Site Code: 384117N1212735W001
Latitude (NAD83): 38.411700
Longitude (NAD83): -121.2735
Groundwater Basin (code): Cosumnes (5-22.16)

Well Use: Residential
Well Status: Active
Well Completion Report Number:
Reference Point Elevation (NAVD88 ft): 78.37
Ground Surface Elevation (NAVD88 ft): 77.37
Total Depth (ft): Confidential
Perforated Interval Depths (ft): Confidential

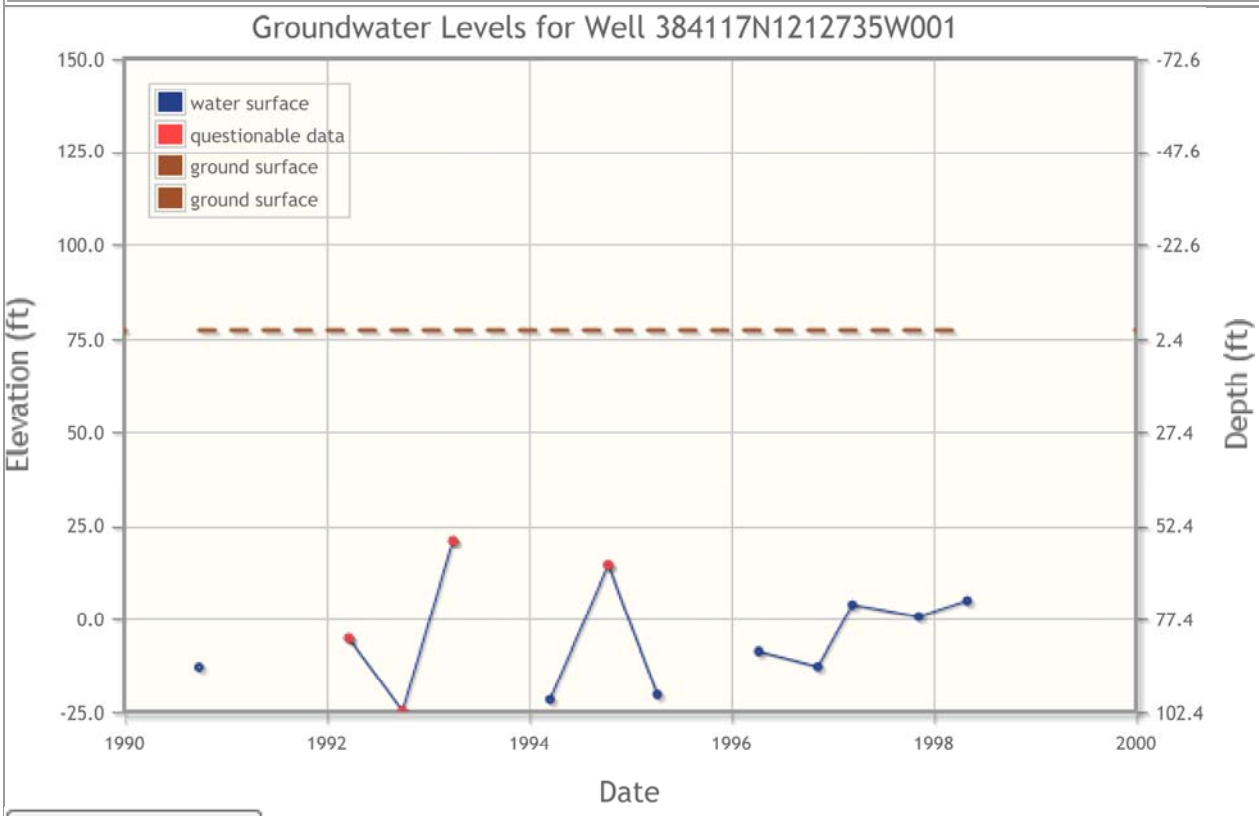


Perform a New Well Search

Groundwater Levels for Station 384117N1212735W001

Data for your selected well is shown in the tabbed interface below. To view data managed in the updated WDL tables, including data collected under the CASGEM program, click the "Recent Groundwater Level Data" tab. To view data stored in the former WDL tables, click the "Historical Groundwater Level Data" tab. To download the data in CSV format, click the "Download CSV File" button on the respective tab. Please note that the vertical datum for "recent" measurements is NAVD88, while the vertical datum for "historical" measurements is NGVD29. To change your well selection criteria, click the "Perform a New Well Search" button.

Station Data **Recent Groundwater Level Data** Historical Groundwater Level Data



Download CSV File

Date	RPE	GSE	RPWS	WSE	GS to WS	Msmt Code	Agency	Comments
03/21/1990	78.370	77.370				N-7	624	
09/26/1990	78.370	77.370	91.3	-12.93	90.3		624	
03/08/1991	78.370	77.370				N-8	624	
10/01/1991	78.370	77.370				N-1	624	
03/19/1992	78.370	77.370	83.6	-5.23	82.6	Q-3	624	
09/30/1992	78.370	77.370	103.2	-24.83	102.2	Q-3	624	
03/30/1993	78.370	77.370	57.4	20.97	56.4	Q-3	624	
10/13/1993	78.370	77.370				N-1	624	
03/15/1994	78.370	77.370	100.1	-21.73	99.1		624	

10/12/1994	78.370	77.370	64	14.37	63	Q-1	624
04/07/1995	78.370	77.370	98.8	-20.43	97.8		624
10/16/1995	78.370	77.370				N-1	624
04/08/1996	78.370	77.370	87.1	-8.73	86.1		624
11/08/1996	78.370	77.370	91.2	-12.83	90.2		624
03/11/1997	78.370	77.370	74.5	3.87	73.5		624
11/07/1997	78.370	77.370	77.7	0.67	76.7		624
04/30/1998	78.370	77.370	73.4	4.97	72.4		624
11/16/1998	78.370	77.370				N-7	624
04/01/1999	78.370	77.370				N-7	624

All elevation and depth measurements are in feet. The vertical datum for recent measurements is NAVD88.

Perform a New Well Search

APPENDIX F: WATER AND WASTEWATER FEE SCHEDULES

CITY OF GALT WATER AND SEWER FEES AND RATES
CITY OF GALT CSMP IMPROVEMENT ESTIMATES
CITY OF GALT WDSMP IMPROVEMENT ESTIMATES
SCWA WATER DEVELOPMENT FEES
SCWA WATER USAGE RATE POLICY
SASD SEWER IMPACT FEES AND RATES
SRCSD IMPACT FEES AND MONTHLY RATES
SEWER CONNECTION FEE AND MONTHLY RATES CALCULATIONS

CITY OF GALT - FEE SUMMARY AND HISTORY

TYPE OF FEE	DESCRIPTION	CURRENT FEE	DATE OF LAST ADJUSTMENT	DATE OF NEXT ADJUSTMENT	INCREASE AMOUNT OR %, IF KNOWN
IMPROVEMENT PLAN FEES					
PLANS CHECK *					
	Processing & Plan Check of First $200,000 ($ value of improvements)	5.0%	12/22/2003	TBD	
	Additional Plan Check beyond $200,000	1.5%	12/22/2003	TBD	
INSPECTION & MATERIALS TESTING					
	Inspection & Materials Testing	3.0%	Unk	TBD	
	$ value of improvements				
MAP REVIEW FEES **					
SUBDIVISION FINAL MAP REVIEW (3 reviews)					
	Basic Processing & Review	$2,200	12/22/2003	TBD	
	Additional Review	$30	12/22/2003	TBD	
RESIDENTIAL PARCEL MAP REVIEW (3 reviews)					
	Basic Processing & Review	$1,800	12/22/2003	TBD	
	Additional Review	$0	12/22/2003	TBD	
COMMERCIAL/INDUSTRIAL PARCEL MAP REVIEW (3 reviews)					
	Basic Processing & Review	$3,300	12/22/2003	TBD	
	Additional Review	$90	12/22/2003	TBD	
SUBDIVISION OR PARCEL TENTATIVE MAP REVIEW FEE (3 reviews)					
	Basic Processing & Review	$2,500	12/22/2003	TBD	
	Additional Review				
LOT LINE ADJUSTMENT					
	Basic Processing & Review	$750	12/22/2003	TBD	
**includes map processing and technical review					
ENCROACHMENT PERMIT FEES					
ONE-TIME PERMIT ($5000 maximum improvement value)					
	Basic Processing	$155	12/22/2003	TBD	
	Inspection	$110	12/22/2003	TBD	
ONE-TIME PERMIT (exceeding $5000 improvement value)					
(Materials Testing, if needed, extra at Time and Materials)	Processing & Plan Check ($ value of improvements)	5.0%	12/22/2003	TBD	
	Inspection -- ($ value of improvements)	3.0%	12/22/2003	TBD	
ANNUAL PERMIT					
	Annual Permit - Basic Processing	$290	12/22/2003	TBD	
	Annual Permit - Inspection (Routine Repairs)	$450	12/22/2003	TBD	
GRADING PERMIT FEES					
PROCESSING AND PLANS CHECK FEE		$300	12/22/2003	TBD	
INSPECTION (Materials Testing, if needed, extra at Time and Materials)		$180	12/22/2003	TBD	

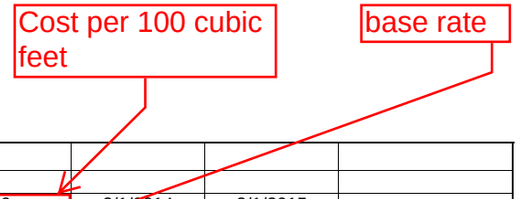
MISCELLANEOUS FEES					
SITE PLAN REVIEW					
	Residential	$31	12/22/2003	TBD	
	Commercial/Industrial/Multi-Family	$558	12/22/2003	TBD	
TIME & MATERIALS					
	Engineer Hourly Rate	$93.00	12/22/2003	TBD	
	Other Technical and Administrative Hourly Rate	$74.00	12/22/2003	TBD	
TRANSPORTATION FEES					
OVERSIZED LOAD PERMIT FEES					
	Single Trip Permit	$16	unknown	TBD	
	Annual/Repetitive Permit	$90	unknown	TBD	
CAPITAL IMPACT FEES					
SEWER CONNECTION					
	Single Family Dwelling	$4,919.00	7/1/2007	TBD	
	Duplex	$4,919.00	7/1/2007	TBD	
	Apartment	$4,919.00	7/1/2007	TBD	
	Mobile Home	$4,919.00	7/1/2007	TBD	
	Commercial and Industrial (per 250 gal)	$4,919.00	7/1/2007	TBD	
Supplemental WWTP Fee	Single Family Dwelling	$3,788.00	7/1/2007	TBD	
	Duplex	$3,788.00	7/1/2007	TBD	
	Apartment	$3,788.00	7/1/2007	TBD	
	Mobile Home	$3,788.00	7/1/2007	TBD	
	Commercial and Industrial (per 250 gal)	$3,788.00	7/1/2007	TBD	
WATER CONNECTIONS					
A. Capacity Fees (per connection)					
	1 inch service	$2,780.00	7/1/2007	TBD	
	1.5 inch service	$5,459.00	7/1/2007	TBD	
	2 inch service	$10,686.00	7/1/2007	TBD	
	3 inch service	$24,009.00	7/1/2007	TBD	
	4 inch service	$43,075.00	7/1/2007	TBD	
	6 inch service	$96,165.00	7/1/2007	TBD	
	8 inch service	$170,964.00	7/1/2007	TBD	
	10 inch service	$267,131.00	7/1/2007	TBD	
	12 inch service	$384,671.00	7/1/2007	TBD	
B. Meter Fees					
	Residential DU with meter installation	$400.00	7/1/2007	TBD	
	Residential DU without meter installation	$41.00	7/1/2007	TBD	
	Commercial - owner responsible for cost of meter and initial installation	$41.00	7/1/2007	TBD	
				TBD	
UTILITY SERVICES RATES					

Cost per EDU (250 gal) of daily flow

Fixed Fee

This is an inspection fee.

CITY OF GALT - FEE SUMMARY AND HISTORY



Water	All Rates Monthly				
Metered Rates					
All	Metered Connections	$1.20	3/1/2014	3/1/2015	
All	1" Meter = 1 inch or less	$2.91	3/1/2014	3/1/2015	
All	2" Meter = Greater than 1 inch up to to 2 Inch	$5.42	3/1/2014	3/1/2015	
All	3" Meter = Greater than 2 inch up to 3 Inch	$8.09	3/1/2014	3/1/2015	
All	4" Meter = Greater than 3 inch up to 4 inch	$14.44	3/1/2014	3/1/2015	
All	6" Meter = Greater than 4 inch up to 6 inch	$41.20	3/1/2014	3/1/2015	
All	8" Meter = Greater than 4 inch up to 6 inch	$73.33	3/1/2014	3/1/2015	
All	Meter - Greater than 8 inch	Engineer Will Calculate	3/1/2014	3/1/2015	
Non- Residential Flat Rates					
Other Non-Metered Commercial/Industrial	Temporary Rates Set By City Engineer When Needed		3/1/2014	3/1/2015	
Residential Flat Rates					
All	Single Family	$28.10	3/1/2014	3/1/2015	
All	Multi-Family Dwelling Units < 1000 sq. ft.	$21.03	3/1/2014	3/1/2015	
All	Mobile Homes < 1000 sq. ft.	$21.03	3/1/2014	3/1/2015	
All	Swimming Pool Fill Fee (Ave 20,000 gallons)	$37.88	3/1/2014	3/1/2015	
All	Swimming Pool Water Refill Fee (Ave 25% year)	$0.65	3/1/2014	3/1/2015	
Special Rates					
Construction	Hydrant Permit	$48.35	3/1/2014	3/1/2015	
	Hydrant Usage Fee	$159.71	3/1/2014	3/1/2015	
	Dwellings Under Construction	$28.10	3/1/2014	3/1/2015	
	Commercial Under Construction	$58.72	3/1/2014	3/1/2015	
Special Fees					
As Required	Payment Administrative Late Charge	10%	3/1/2014	3/1/2015	
As Required	Shut-Off Notice Charge for Non-Payment	$10.03	3/1/2014	3/1/2015	
As Required	Turn-Off for Non-Payment	$74.43	3/1/2014	3/1/2015	
As Required	After Hours Turn-on Charge for Non-Payment	$138.68	3/1/2014	3/1/2015	
All	Back-Flow Prevention Monitoring	$0.00	3/1/2014	3/1/2015	
As Required	Extra District Account Fee	25%	3/1/2014	3/1/2015	

CITY OF GALT - FEE SUMMARY AND HISTORY

ccf = 100 cubic feet

WASTEWATER	All Rates Monthly				
Use					
	Commercial / Industrial	$1.72 + $3.34/ccf	3/1/2014	3/1/2015	
	Multi-Family > Four-Plex with Water Meter	$3.07/ccf	3/1/2014	3/1/2015	
	Institutional	$2.33/ccf	3/1/2014	3/1/2015	
	Single Family Residential (flat rate)	$46.04	3/1/2014	3/1/2015	
	Multi-Family w/o water meter (flat rate)	$46.04	3/1/2014	3/1/2015	
	Sewage Metered - 4"	$15.09+00529/gal	3/1/2014	3/1/2015	
	Sewage Metered - 6"	$15.69+0.00529/gal	3/1/2014	3/1/2015	
	Temporary Charge for Non-Metered Non-residental and determinations for mixed use	Public Works Director to determine			
High Strength Surcharge					
	Average BOD greater then 250 mg/l	$0.35	3/1/2014	3/1/2015	
	Average TSS greater than 210 mg/l	$0.32	3/1/2014	3/1/2015	
		(Surcharge applies to all BOD & TSS produced)			
Miscellaneous Fees					
	Late Charge	10% of delinquent amount per billing	3/1/2014	3/1/2015	
	Industrial/Commercial Permit Fee	$326.16	3/1/2014	3/1/2015	
	Extra District Account Fee	25%	3/1/2014	3/1/2015	
STORMWATER	All Rates Monthly				
RATE FOR EXISTING/NEW DEVELOPMENT (Not Designated as Tier II) - TIER I Rate					
	Residential Rate per Unit (monthly)				
	Single Family Dwelling	$2.43			
	Duplex/Triplex/Fourplex	$2.43			
	Commercial /Industrial (monthly)				
	Activity - Less then 5000 sf floor space	$2.95			
	Activity - 5000 to 10000 sf floor space	$7.37			
	Activity - 10000 to 20000 sf floor space	$14.74			
	Activity - greater then 20000 sf floor space	$29.47			
RATE FOR DESIGNATED NEW DEVELOPMENT - TIER II Rate*					
	Residential Rate (monthly)				
	Per Unit Single Family Dwelling	$6.90	3/1/2014	3/1/2015	
	Per Unit Duplex/Triplex/Fourplex	$6.90	3/1/2014	3/1/2015	
	Multi-Family Residential - More Than 4 Units (monthly)				
	Per acre Lot Size	$91.36	3/1/2014	3/1/2015	
	Commercial /Industrial (monthly)				
	Per acre Lot Size	$102.76	3/1/2014	3/1/2015	

SOLID WASTE	All Rates Monthly				
Standard Residential Service					
One 64-Gallon Trash Cart, One 64-Gallon Recycling Cart, One 96-Gallon Greenwaste Cart		$25.22	3/1/2014	3/1/2015	
Low Volume Residential Service					
One 38-Gallon Trash Cart, One 64-Gallon Recycling Cart, One 96-Gallon Greenwaste Cart		$22.87	3/1/2014	3/1/2015	
One 20-Gallon Trash Cart, One 64-Gallon Recycling Cart, One 96-Gallon Greenwaste Cart		$20.74	3/1/2014	3/1/2015	
High Volume Residential Services					
Two 64-Gallon Trash Carts, One 64-Gallon Recycling Cart, One 96-Gallon Greenwaste Cart		$63.11	3/1/2014	3/1/2015	
Three 64-Gallon Trash Carts, One 64-Gallon Recycling Cart, One 96-Gallon Greenwaste Cart		$100.96	3/1/2014	3/1/2015	
One 96-Gallon Trash Cart, One 64-Gallon Recycling Cart, One 96-Gallon Greenwaste Cart		$38.95	3/1/2014	3/1/2015	
Charge For Additional Recycling Or Greenwaste Cart(s)					
One upsized 96 gallon recycling container, or a total of 2 recycling containers of either 64 gallon or 96 gallon in size.		No Charge	3/1/2014	3/1/2015	
One (1) additional greenwaste cart		No Charge	3/1/2014	3/1/2015	
Charge for second additional (beyond the two provided at no charge), and each additional recycling or greenwaste cart *		$8.42	3/1/2014	3/1/2015	
Residential Extras & Special Rates					
One Extra Pick-up (on a scheduled service day)		$13.13	3/1/2014	3/1/2015	
One Special Pick-up (on an unscheduled service day)		$19.68	3/1/2014	3/1/2015	
One White good unit containing Freon (on Bulky Waste Collection Day)		$37.08	3/1/2014	3/1/2015	
One White good unit containing Freon (not on Bulky Waste Collection Day)		$61.80	3/1/2014	3/1/2015	
Residential Backyard Service-Additional Monthly Rate					
Backyard Service		$21.06	3/1/2014	3/1/2015	
Source Reduction and Recycling Element (SRRE) Fee		$0.45	3/1/2014	3/1/2015	

Table 7.2 Capital Improvement Projects
Wastewater Collection System Master Plan
City of Galt

Figure No.	Type of Improvement	Description/ Street	Description / Limits	Pipeline Cost Schedule (A or B)	Project Length/Size and Cost					Capital Improvement Phasing				Future Users Benefit (%)	Reimbursement Category	
					Ex. Size/ Diam. (in)	New Size/ Diam. (in)	Replace/ New	Length (ft)	Capital Improvement Cost[2],[3] ($)	Phase 1 2009-2015 ($)	Phase 2 2016-2020 ($)	Phase 3 2021-2025 ($)	Phase 4 2026-2030 ($)		Existing Improvements ($)	Future Improvements ($)
NE-4	Pipe	North of UPRR	Marengo Road to east of Marengo Road	B	-	10	New	2,800	$ 369,000			$ 369,000		100%	$ -	$ 369,000
Commercial Trunk Sewer																
C-1	Pipe	North of Twin Cities Road	McFarland Street to West of Highway 99	B	-	18	New	800	$ 172,000			$ 172,000		100%	$ -	$ 172,000
C-2	Pipe	North of Twin Cities Road	West of Highway 99 to East of Highway 99	B	-	15	New	2,100	$ 416,000			$ 416,000		100%	$ -	$ 416,000
C-2A	Pipe/Casing[1]	North of Twin Cities Road	Highway 99 Crossing	A	-	15/30	New	400	$ 720,000			$ 720,000		100%	$ -	$ 720,000
C-3	Pipe	North of Twin Cities Road	East of Highway 99 to Bergeron Road	B	-	12	New	800	$ 127,000				$ 127,000	100%	$ -	$ 127,000
C-4	Pipe	North of Twin Cities Road	Bergeron Road to McKenzie Road	B	-	10	New	2,800	$ 369,000				$ 369,000	100%	$ -	$ 369,000
C-5	Pipe	East of Highway 99	North of Twin Cities Road to Mingo Road	B	-	10	New	2,100	$ 278,000				$ 278,000	100%	$ -	$ 278,000
C-6	Pipe	West of Highway 99	North of Twin Cities Road to South of Mingo Road	B	-	10	New	1,500	$ 198,000				$ 198,000	100%	$ -	$ 198,000
C-7	Pipe	West of Highway 99	North of Twin Cities Road to South of Mingo Road	B	-	10	New	1,000	$ 132,000				$ 132,000	100%	$ -	$ 132,000
C-8	Force Main	West of Highway 99	North of Twin Cities Road to South of Mingo Road	B	-	10	New	200	$ 24,000			$ 24,000		100%	$ -	$ 24,000
C-8A	Pipe/Casing[1]	North of Twin Cities Road	UPRR Crossing	A	-	10/18	New	100	$ 141,000			$ 141,000		100%	$ -	$ 141,000
Lift Stations[4]																
VO-LS	Lift Station	Vintage Oak Avenue and Carrilion Boulevard	Vintage Oak Lift Station Upgrade (3.8 mgd Firm Capacity)	-	4.3 mgd	5.7 mgd	Upgrade	-	$ 3,050,000	$ 3,050,000				100%	$ -	$ 3,050,000
C-LS	Lift Station	East of Railraod Tracks near WWTP	Commercial Lift Station (1.4 mgd Firm Capacity)	-	-	2.8 mgd	New	-	$ 1,612,000			$ 1,612,000		100%	$ -	$ 1,612,000
	Land Acquisition				-	0.25 acres	New	-	$ 98,000			$ 98,000		100%	$ -	$ 98,000
								Future Improvements Subtotal	**$ 20,032,000**	**$ 3,525,000**	**$ 7,553,000**	**$ 6,877,000**	**$ 2,077,000**		**$ -**	**$ 20,032,000**
								CIP Total (Existing and Future)	**$ 55,901,000**	**$ 28,399,000**	**$ 11,218,000**	**$ 10,542,000**	**$ 5,742,000**		**$ 28,557,300**	**$ 27,343,700**

Notes:
1. Proposed casings size and carrier pipe size.
2. Baseline Construction Cost plus 25% to account for unforeseen events and unknown conditions.
3. Estimated Construction Cost plus 30% to cover other costs including Engineering, Construction Management, and Project Administration.
4. Lift station capacities refer to the total capacity unless noted otherwise.
5. Costs are based on the Engingeering News Record Construction Cost Index 20-city average of 8534 (March 2009).

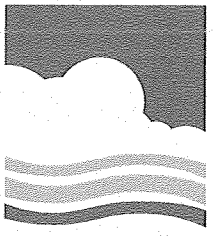
Table 6.3 Proposed Water Distribution System Improvements
Water Distribution System Master Plan
City of Galt

Figure No.	Type of Improvement	Description/ Street	Description / Limits	Project Length/Size				Capital Improvement Phasing			
				Ex. Size/ Diam. (in)	New Size/ Diam. (in)	Replace/ New	Length (ft)	Phase 1 2009-2015	Phase 2 2016-2020	Phase 3 2021-2025	Phase 4 2026-2030
P-58	Pipe	Vauxhall Avenue	Marengo Road to west of Cherokee Lane	-	12	New	2,700		Phase 2		
P-59	Pipe	Marengo Road\Amador Avenue	South of Elk Hills Drive to south of DiMaggio Way	-	14	New	2,400		Phase 2		
P-60	Pipe	West of Cherokee Lane	South of Amador to North of Simmerhorn Road	-	14	New	1,950		Phase 2		
P-60A	Pipe/Casing	West of Cherokee Lane	Crossing Under Drainage Channel	-	14/30	New	200		Phase 2		
P-61	Pipe	Cherokee Lane	South of Twin Cities Road to Quiggle Road	-	12	New	3,300			Phase 3	
P-61A	Pipe/Casing	Cherokee Lane	UPRR Crossing	-	12/24	New	200			Phase 3	
P-61B	Pipe/Casing	Cherokee Lane	Crossing Under Drainage Channel	-	12/24	New	200			Phase 3	
P-62	Pipe	Cherokee Lane	Quiggle Road to Simmerhorn Road	-	12	New	5,350			Phase 3	
P-62A	Pipe/Casing	Cherokee Lane	Crossing Under Drainage Channel	-	12/24	New	200			Phase 3	
P-63	Pipe	Cherokee Lane/Boessow Road	Simmerhorn Road to West of Cherokee Lane	-	12	New	5,400			Phase 3	
P-64	Pipe	South of Amador Avenue	West of Cherokee Lane to Cherokee Lane	-	12	New	2,200			Phase 3	
P-65	Pipe	North of Vauxhall Avenue	West of Cherokee Lane to Cherokee Lane	-	12	New	2,600			Phase 3	
P-66	Pipe	North of Simmerhorn Road	West of Cherokee Lane to Cherokee Lane	-	12	New	2,600			Phase 3	
P-67	Pipe	East of Marengo Road	Simmerhorn Road to North of Simmerhorn Road	-	12	New	2,100			Phase 3	
P-68	Pipe	East of Marengo Road	Simmerhorn Road to Boessow Road	-	12	New	2,650			Phase 3	
P-69	Pipe	Simmerhorn Road	Marengo Road to west of Cherokee Lane	-	12	New	2,700			Phase 3	
P-70	Pipe	Boessow Road	Marengo Road to west of Cherokee Lane	-	12	New	2,650			Phase 3	
P-71	Pipe	West of Cherokee Lane	North of Simmerhorn Road to south of Amador Avenue	-	14	New	2,450			Phase 3	
P-72	Pipe	McFarland Street	Spring Street to Walnut Avenue	-	16	New	1,400			Phase 3	
P-73	Pipe	Spring Street	Highway 99 to McFarland Street	-	12	New	2,800			Phase 3	
P-74	Pipe	Stockton Boulevard/east of Stockton Boulevard	Spring Street to Walnut Avenue	-	16	New	1,550			Phase 3	
P-75	Pipe	Bergeron Road	Twin Cities Road to north of Twin Cities Road	-	16	New	1,650			Phase 3	
P-76	Pipe	North of Twin Cities Road	Twin Cities Road to Bergeron Road	-	12	New	4,100			Phase 3	
P-77	Pipe	North of Twin Cities Road	Highway 99 to Bergeron Road	-	12	New	2,100			Phase 3	
P-78	Pipe	Eastside of Highway 99	Twin Cities Road to north of Twin Cities Road	-	12	New	2,450			Phase 3	
P-79	Pipe	Twin Cities Road	West of Bergeron Road to Eastside of Highway 99		16	New	350			Phase 3	
P-80	Pipe	South of Mingo Road to north of Mingo Road	Bergeron Road/East of Highway 99	-	16	New	4,450				Phase 4
P-81	Pipe	East of Stockton Boulevard	South of Mingo Road to north of Twin Cities Road	-	12	New	1,450				Phase 4
P-82	Pipe	Twin Cities Road	Highway 99 Crossing to East of UPRR	-	16	New	1,600				Phase 4
P-82A	Pipe/Casing	Twin Cities Road	Highway 99 Crossing	-	16/30	New	500				Phase 4
P-83	Pipe	Eastside of Union Pacific Railroad	Twin Cities Road to Mingo Road	-	16	New	4,400				Phase 4
P-84	Pipe	Westside of Highway 99	Twin Cities Road to north of Mingo Road	-	12	New	5,250				Phase 4
P-85	Pipe	North of Twin Cities Road	Highway 99 to East of UPRR	-	16	New	1,100				Phase 4
P-86	Pipe	Eastside of Highway 99	South of Mingo Road to Mingo Road	-	12	New	3,000				Phase 4
P-87	Pipe	North of Mingo Road	Highway 99 to East of Highway 99/north of Mingo Road	-	12	New	2,650				Phase 4
P-88	Pipe	Eastside of Highway 99	Mingo Road to north of Mingo Road	-	12	New	1,800				Phase 4
P-89	Pipe	North of Mingo Road	East of Highway 99 to Westside of 99	-	16	New	950				Phase 4
P-89A	Pipe/Casing	North of Mingo Road	Highway 99 Crossing	-	16/30	New	200				Phase 4
P-90	Pipe	North of Mingo Road	Highway 99 to East of UPRR	-	16	New	2,700				Phase 4

Table 6.3 Proposed Water Distribution System Improvements
Water Distribution System Master Plan
City of Galt

Figure No.	Type of Improvement	Description/ Street	Description / Limits	Project Length/Size				Capital Improvement Phasing			
				Ex. Size/ Diam. (in)	New Size/ Diam. (in)	Replace/ New	Length (ft)	Phase 1 2009-2015	Phase 2 2016-2020	Phase 3 2021-2025	Phase 4 2026-2030
P-91	Pipe	Eastside of Union Pacific Railroad	Mingo Road to north of Mingo Road	-	16	New	2,500				Phase 4
P-92	Pipe	Mingo Road	Highway 99 to East of UPRR	-	12	New	1,100				Phase 4
P-93	Pipe	Bergeron Road	North of Twin Cities Road to South of Mingo Road	-	14	New	1,850				Phase 4
P-94	Pipe	Bergeron Road\North of Twin Cities Road	North of Twin Cities Road to South of McKenzie Road	-	14	New	2,493				Phase 4
Storage Tanks and Booster Pumps											
T-1	Storage Tank	Di Maggio Way	East of Carillion Blvd	-	3 MG	New	-	Phase 1			
T-2	Storage Tank	Bergeron Road	North of Twin Cities Road	-	3 MG	New	-				Phase 4
	Land Acquisition			-	2 acres	New	-				Phase 4
Groundwater Wells											
W-22	Supply Well[(2)]	McFarland Street	South of Walnut Avenue	-	1,400 gpm	New	-	Phase 1			
	Land Acquisition				0.25 acres	New	-	Phase 1			
W-23	Supply Well[(2)]	East of Tradespost Trail	East of Existing Creekside Well (Well 11)	-	1,400 gpm	New	-	Phase 1			
	Land Acquisition				0.25 acres	New	-	Phase 1			
W-24	Supply Well[(2)]	Kost Road	Near Meadowview Drive	-	1,400 gpm	New	-	Phase 1			
	Land Acquisition				0.25 acres	New	-	Phase 1			
W-25	Supply Well[(2)]	Industrial Drive	South of Live Oak Avenue	-	1,400 gpm	New	-	Phase 1			
	Land Acquisition				0.25 acres	New	-	Phase 1			
W-26	Supply Well[(2)]	Carillion Boulevard	South of Vauxhall Avenue	-	1,400 gpm	New	-	Phase 1			
	Land Acquisition				0.25 acres	New	-	Phase 1			
W-27	Supply Well[(2)]	Marengo Road	South of Elk Hills Drive	-	1,400 gpm	New	-		Phase 2		
	Land Acquisition				0.25 acres	New	-		Phase 2		
W-28	Supply Well[(2)]	West of Cherokee Lane	South of UPRR	-	1,400 gpm	New	-		Phase 2		
	Land Acquisition				0.25 acres	New	-		Phase 2		
W-29	Supply Well[(2)]	West of Cherokee Lane	Simmerhorn Road	-	1,400 gpm	New	-			Phase 3	
	Land Acquisition				0.25 acres	New	-			Phase 3	
W-30	Supply Well[(2)]	West of Cherokee Lane	North of Simmerhorn Road	-	1,400 gpm	New	-			Phase 3	
	Land Acquisition				0.25 acres	New	-			Phase 3	
W-31	Supply Well[(2)]	Bergeron Road	North of Twin Cities Road	-	1,400 gpm	New	-				Phase 4
	Land Acquisition				0.25 acres	New	-				Phase 4
W-32	Supply Well[(2)]	West of McKenzie Road	North of Twin Cities Road	-	1,400 gpm	New	-				Phase 4
	Land Acquisition				0.25 acres	New	-				Phase 4
W-33	Supply Well[(2)]	South of Mingo Road	Bergeron Road Extension	-	1,400 gpm	New	-				Phase 4
	Land Acquisition				0.25 acres	New	-				Phase 4
Water Treatment Plants											
WTP-4	Water Treatment	Carillion Boulevard	Carillion WTP	2,700 gpm	5,500 gpm	Upgrade	-	Phase 1			
WTP-5	Water Treatment	West of Cherokee Lane	Future WTP for Future Wells 28, 29, and 30.	-	4,200 gpm	New	-		Phase 2		
	Land Acquisition				0.50 acres	New	-		Phase 2		
WTP-6	Water Treatment	Bergeron Road	Future WTP for Future Wells 31, 32, and 33.	-	4,200 gpm	New	-				Phase 4
	Land Acquisition				0.50 acres	New	-				Phase 4

Department of Water Resources
Michael Peterson, Director



SACRAMENTO COUNTY
WATER AGENCY

Including service to the cities of
Elk Grove and Rancho Cordova

DATE: January 31, 2014

TO: All Developers, Builders, Consulting Engineers, and Other Interested Parties

SUBJECT: SACRAMENTO COUNTY WATER AGENCY (SCWA) FEE & CREDIT REVISIONS EFFECTIVE MARCH 1, 2014

Effective March 1, 2014, 12:01 a.m.
Pursuant to SCWA Code and effective March 1, 2014, an inflationary increase of 3.852% will be applied to the SCWA Zone 40 fees and credits, Zone 40 Special Service Area A–Recycled Water fees and credits, and SCWA Zone 50 fees.

Summary of SCWA Zone 40 and Zone 50 Rates

SCWA Zone 40 Water Development Fee Rate	Current Rate	Revised Rate
Rate per Equivalent Dwelling Unit (EDU)	$13,447	$13,965
Commercial Service Fee per acre	$8,205	$8,521
Open Space Service Fee per acre	$1,590	$1,651
Park Service Fee per acre	$3,259	$3,385
Public School Service Fee per acre	$5,432	$5,641

SCWA Zone 40 Special Service Area A – Recycled Water
See attached Schedules R-1 and R-2 for rates. This fee is imposed pursuant to provisions in Ordinance WAO-0054 adopted by the SCWA Board of Directors on June 15, 2004.

SCWA Zone 50 Water Development Fee Rate	Current Rate	Revised Rate
Rate per Equivalent Dwelling Unit (EDU)	$241	$250
Commercial Service Fee per acre	$3,476	$3,610
Open Space Service Fee per acre	$3,476	$3,610

For fees on Schedule A that are due prior to approval of an improvement plan, the date of plan approval determines the appropriate rate. For fees on Schedules A and R-1 that are due prior to issuance of a building permit, the date of payment determines the appropriate rate. For credit items on Schedules C and R-2, the date of plan approval determines the appropriate rate.

If you have any questions or would like additional information, please contact Darrell Eck at (916) 874-5039.

Sincerely,

Susan R. Purdin, CPA
Chief Financial and Administrative Officer
Sacramento County Department of Water Resources
Sacramento County Water Agency

Attachments:
Schedules A, C, R-1, R-2
Maps: Zone 40
Zone 40 Special Service Area A – Recycled Water
Zone 50

cc:
Michael Peterson, DWR
Steve Pedretti, DWR
Kerry Schmitz, DWR
Darrell Eck, DWR
John Kern, DWR
Alice Lee, DWR
George Scott, DTech
Bob Davison, County Engineering
Accela Issues, DTech (e-copy)
Elizabeth Sparkman, City of Rancho Cordova
Elizabeth Sparkman, City of Rancho Cordova
Cyrus Abhar, City of Rancho Cordova
Jose Romo, DSSD
Tony Santiago, DSSD
Richard Shepard, City of Elk Grove
Darren Wilson, City of Elk Grove
Andrew Keys, City of Elk Grove
Albert Stricker, City of Rancho Cordova
County Counsel, (SCWA Code update)

Sonoma County Water Agency Rates and Fees Chapter 3.50 excerpt

3.50.110 General Metered Service.

1) Monthly Service Charge:

A monthly service charge shall be imposed as follows:

A monthly service charge shall be imposed as follows: **Meter Size**	**Residential Service Charge**		**Commercial/Industrial Service Charge** Base Rate	
	8/23/2013	7/01/2014	8/23/2013	7/01/2014
¾"	$10.03	$10.19	N/A N/A	N/A
1"	$12.43	$12.64	$39.28	$40.10
1½"	$21.78	$22.14	$50.02	$51.07
2"	$33.19	$33.75	$64.08	$65.42
3"	N/A N/A	N/A	$105.41	$107.62
4"	N/A N/A	N/A	$163.28	$166.70
6"	N/A N/A	N/A	$328.58	$335.48
8"	N/A N/A	N/A	$560.04	$571.80

2) Quantity Rate:

The Residential monthly usage charge for each 100 cubic feet (748 gallons) shall be $1.35 $1.38

The Non-Residential monthly usage charge for each 100 cubic feet (748 gallons) shall be $1.07 $1.09

3) The applicable monthly service charge shall be added to the monthly usage charge computed at the Quantity Rate to determine the total general metered service monthly rate.

4) Water Lifeline Rate Assistance Program:

Upon approval of application, a Qualifying Customer may receive a periodic adjustment of charges paid. Application procedures and rebate will be as determined by the Agency Engineer, as amended from time to time. Qualifying Customer is defined as any residential user that meets the requirements of the Water Lifeline Rate Assistance Program, as determined from time to time by the Board of Directors.

Fee and Rate Schedule

As referenced in the SASD Sewer Ordinance
Adopted by SASD's Board of Directors on September 25, 2013

SACRAMENTO AREA SEWER DISTRICT
SERVING YOU 24/7

SASD SEWER IMPACT FEES

Category Description		Billing Unit and Charge	
		Relief	**Expansion**
Single Family Residential	Parcels recorded prior to July 1, 2003	$461 per ESD	$2,362[1] per ESD
	Parcels recorded on or after July 1, 2003	$2,763 per net acre	$14,171[2] per net acre
Multi-Family Residential		$2,763 per net acre	$14,171[2] per net acre
Commercial		$2,763 per net acre	$14,171[2] per net acre
Non-Defined Commercial Users		$461 per ESD	$2,362[1] per ESD
Public Parks and Public Schools		$461 per ESD	$2,362[1] per ESD
Industrial Users		Based on flow: $45 per 1,000 gallons of flow based on maximum monthly discharge	

[1] Developer Project Costs: $2,007, SASD Costs: $355
[2] Developer Project Costs: $12,044, SASD Costs: $2,127

ESD =Equivalent Single Family Dwelling

For more information about SASD's fees and rates,
please call SASD's Permit Services Unit at (916) 876-6100.

Fee and Rate Schedule

As referenced in the SASD Sewer Ordinance
Adopted by SASD's Board of Directors on September 25, 2013

SACRAMENTO AREA SEWER DISTRICT
SERVING YOU 24/7

SASD FEES

Category Description	Billing Unit and Charge
Administrative Fee for Deferral of Sewer Impact Fees, Commercial and Industrial Projects *(For New and Expanding Businesses)*	$2,515 Administration Fee per project
Application Fee / Administrative Fee for Deferral or Waiver of Sewer Impact Fees for Affordable Housing Projects *(For Qualified Affordable Housing Projects)*	• $1,000 Application and Administrative Processing Fee for the first government entity listed on the application for fee deferral or waiver • $275 Application and Administrative Processing Fee for each additional government entity listed on the application for fee deferral or waiver
Administrative Fee for Deferral of Sewer Impact Fees for Market Rate Residential Projects	$350 Administrative Processing Fee per building permit for which fees are requested to be deferred
Sewer Tap Construction Fee	• 4-inch Lower Lateral to Mainline Tap: $539 • 6-inch Lower Lateral to Mainline Tap: $577 • 4-inch Lower Lateral to Manhole Tap: $1,510 • 6-inch Lower Lateral to Manhole Tap: $1,524 • 8-inch Lower Lateral to Manhole Tap: $1,561
Information Technology Recovery Fee *(Recovers cost of ACCELA database management and development)*	• Fees within city jurisdictions: 1% of total fees not to exceed $100 • Fees within unincorporated County: 3% of total fees not to exceed $225
Water Meter Reading Fee *(For unreported meter readings by metered user)*	$25 per meter reading
Construction Inspection Costs	Charge is based on time and material costs
Technical Services *(Covers SASD's cost of time and materials for special projects)*	Charge is based on time and material costs
Administration Fee for Collector Sewer Reimbursement Agreements	Cost for the District to administer the agreement is established at $250 for agreements in the amount of $10,000 or less, and $500 for agreements in excess of $10,000. Amount will be deducted from the initial reimbursement.
Wastewater Discharge Permit Fee	Charge is based on time and material costs

For more information about SASD's fees and rates,
please call SASD's Permit Services Unit at (916) 876-6100.

Fee and Rate Schedule

As referenced in the SASD Sewer Ordinance
Adopted by SASD's Board of Directors on September 25, 2013

SACRAMENTO AREA SEWER DISTRICT
SERVING YOU 24/7

SASD SEWER RATES

Category Description	Billing Unit and Charge
Single-Family Residential Users *(Monthly sewer service charge)*	$19.85 per month *($39.70 bimonthly)*
Multiple-Family Residential Users *(Monthly sewer service charge)*	$14.89 per month per unit *($29.78 bimonthly)*
Commercial Users *(Monthly sewer service charge)*	$19.85 multiplied by the Enterprise/Use Factor in the Sewer Ordinance, Section 6.8.3
Industrial and Non-Defined Commercial Users *(Monthly sewer service charge based on measured flow and loadings of the discharge)*	**For Industrial Users:** $7.16 flat rate administration charge (+) $72.73 per millions of gallons of flow (+) $5.10 per 1,000 lbs of Total Suspended Solids Equals Total User Monthly Sewer Service Charge **For Non-Defined Commercial Users:** $19.85 per 9,300 gallons of flow

For more information about SASD's fees and rates,
please call SASD's Permit Services Unit at (916) 876-6100.

REGIONAL SAN SEWER IMPACT FEES

REGIONALSAN
TAKING THE WASTE OUT OF WATER

Sewer Impact Fee Summary

User Type	Area	Sewer Impact Fees per ESD			
		Effective through June 30, 2014	July 1, 2014 - June 30, 2015	July 1, 2015 - June 30, 2016	July 1, 2016
Single-Family Residential and Commercial	Infill	$2,543	$2,781	$3,063	$3,358
	New	$4,304	$4,729	$5,116	$5,523
Multi-Family Residential	Infill	$1,907	$2,086	$2,297	$2,519
	New	$3,228	$3,547	$3,837	$4,142
Non-Defined Commercial	Infill	$2,543 per 9,300 gallons of flow	$2,781 per 9,300 gallons of flow	$3,063 per 9,300 gallons of flow	$3,358 per 9,300 gallons of flow
	New	$4,304 per 9,300 gallons of flow	$4,729 per 9,300 gallons of flow	$5,116 per 9,300 gallons of flow	$5,523 per 9,300 gallons of flow

Industrial and Groundwater Remediation Sewer Impact Fee Summary

Areas	Flow per 1,000 gallons	BOD per 1,000 pounds	TSS per 1,000 pounds	TKN per 1,000 pounds	Pathogens per 1,000 gallons of domestic wastewater flow	Effective Period
Infill	$43	$37,551	$12,556	$16,121	$11	Through June 30, 2014
New	$199					
Infill	$50	$38,923	$13,015	$33,374	$11	July 1, 2014 - June 30, 2015
New	$96					
Infill	$54	$40,338	$13,487	$67,935	$14	July 1, 2015 - June 30, 2016
New	$106					
Infill	$59	$41,840	$13,990	$103,727	$22	July 1, 2016
New	$116					

Questions?

Contact the Permit Services Unit at 916-876-6100

REGIONAL SAN SEWER RATES
(Proposed)

REGIONALSAN
TAKING THE WASTE OUT OF WATER

Sewer Rate Summary

User Type	Billing Unit	Monthly Rates			
		Effective through June 30, 2014	July 1, 2014 -June 30, 2015	July 1, 2015 -June 30, 2016	July 1, 2016
Single-Family Residential	Per ESD	$26.00	$29.00	$32.00	$35.00
Multi-Family Residential	Per Unit	$19.50	$21.75	$24.00	$26.25
Commercial	Sewer Rate multiplied by the Enterprise/ Use Factor	$26.00	$29.00	$32.00	$35.00
Metered Commercial (West Sacramento)	Sewer Rate multiplied by the Flow and Loading Factor	$26.00	$29.00	$32.00	$35.00
Non-Defined Commercial	Per 9,300 gallons	$26.00	$29.00	$32.00	$35.00

Industrial, Groundwater Remediation, and Temporary Discharge Permit Sewer Rate Summary

Flow per 1,000,000 gallons	**BOD** per 1,000 pounds	**TSS** per 1,000 pounds	**TKN** per 1,000 pounds	**Pathogens** per 1,000,000 gallons of domestic wastewater flow	**Effective Period**
$318.46	$191.89	$110.87	N/A	N/A	Through June 30, 2014
$704.00	$361.00	$215.00	$431.00	$119.00	July 1, 2014 - June 30, 2015
$741.00	$362.00	$215.00	$605.00	$167.00	July 1, 2015 - June 30, 2016
$779.00	$363.00	$215.00	$778.00	$215.00	July 1, 2016

Questions?

Contact the Permit Services Unit at 916-876-6100

View Regional San Sewer Rates at: ***www.regionalsan.com/ordinances-agreements***

Estimated Monthly Sewer Fees

Alternative	Fixed Charge ($)	Usage Rate ($)	Usage (ccf)	High Strength Surcharge	Extra District Account Fee (%)	Monthly Fee
A	1.72	$ 3.34	9548	$ 3,342	25%	$ 44,044
B	1.72	$ 3.34	6345	$ 2,221	25%	$ 29,267
C	1.72	$ 3.34	4275	$ 1,496	25%	$ 19,723
F	0	$ 54.85	771	$ -	0	$ 42,310

Note:

1) Usage for Alternative F is based on Equivilent Single Family Dwellings (ESDs) not ccf.
2) Usage rate for Alternative F is based on a proposed rate starting July 1, 2016.
3) Actual monthly fees are based on the fee structure of the public entity and water or wastewater production.
4) The City of Galt adds an 25% fee for customers outside their city limits (Alternatives A, B, and C)
5) Wastewater production can be based on water usage or metering of the wastewater.
6) A "High Strength Surcharge" was added due to the expected high concentrations of BOD ($0.35/ccf) for Alternatives A, B, and C.
7) Usage rate for Alternative F is based on the monthly rates for both SASD and Sacramento Regional County Sanitation District

Estimated Connection Fee

Alternative	$/ESD	Usage (ESD)	Connection Fee
A	8707	1229	$ 10,698,744
B	8707	816	$ 7,109,022
C	8707	550	$ 4,790,591
F	4304	1028	$ 4,159,443

Note:

1) The connection fee for Alternative F is reduced because the site alread had 62.08 ESD's credited to the parcel.
2) Connection fees are based on the projected peak daily wastewater production.
3) The sewer impact fee for SASD has already been paid and is not included in the connection fee cost for Alternative F

SUMMIT
SUMMIT ENGINEERING, INC.
463 Aviation Blvd., Suite 200
Santa Rosa, CA 95403
707 527-0775
www.summit-sr.com